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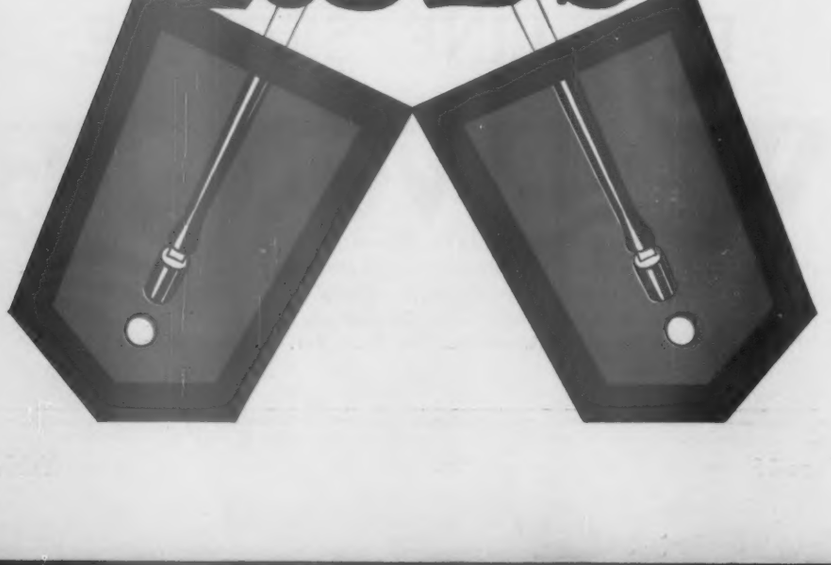

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PRODUCING REFINING MARKETING

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Sweet Crude Market Gaining Strength

Highest daily average estimated total production in 1927, week ended July 30, 2,587,105 bbls. Lowest in 1927, Jan. 22, 2,360,789 bbls.

Much Depends on Success of Present Movements. Situation Regarding "Sweet" Oils Is Improving.

By Andrew M. Rowley

Highest daily average estimated light oil production in 1927, week ended July 30, 2,102,385 bbls. Lowest in 1927, Jan. 1, 1,790,729 bbls.

Stronger prices in the refined oil market with greater optimism in that branch of the industry; indications that increasing consumption not only will permit refiners to maintain present prices but will result in higher quotations; continued decline in the production of "sweet oils"; and larger withdrawals of crude from storage in the Oklahoma-Kansas-North Texas area are bullish factors in the petroleum situation strengthening the belief an advance in the posted prices of higher gravity sweet oils may be expected within the comparatively near future. Efforts to hold production of heavier gravity crudes and those regarded as less desirable by refiners more nearly to market requirements are a most important factor in the general situation and it is felt the crude price structure affecting these crudes depends greatly upon the success of plans being considered for restricting the output.

With the greater Seminole area in Oklahoma producing less than 300,000 barrels a day and all indications pointing to further substantial drops in output there until early summer at least, there is no doubt the situation in the Mid-Continent area, outside of West Texas, is better than it has been for more than a year. West Texas operators are confident some plan will be devised for handling the Hendricks Pool overproduction problem successfully and California operators already have curtailed production and will shut in more as a result of the conservation movement inaugurated there by oil companies and the State. It is estimated approximately 50,000 barrels a day are being withdrawn from storage in Oklahoma and Kansas at this time.

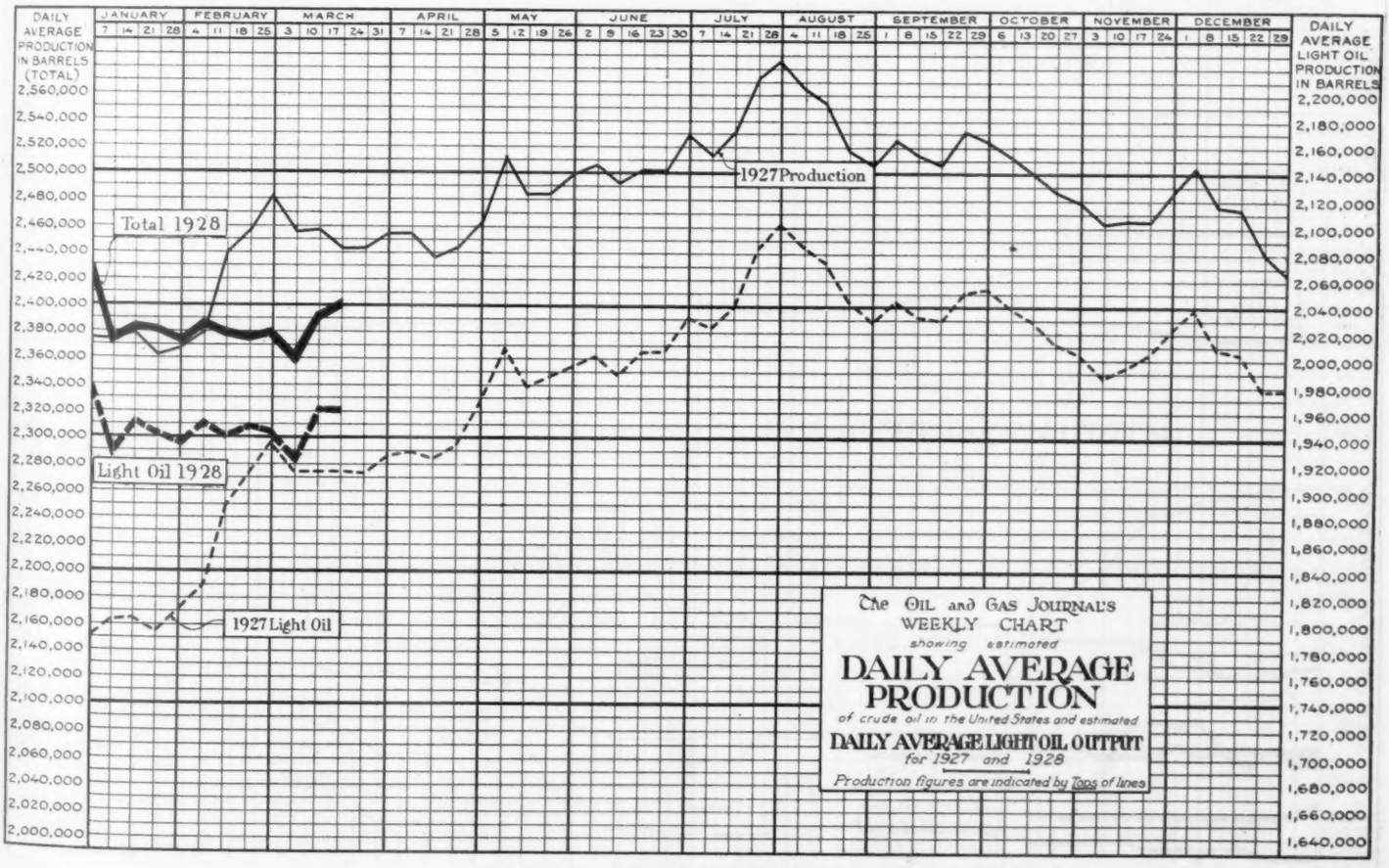
Of equal or greater importance to overproduction is consumption. The movement now spreading to all sections of the United States to stimulate automobile travel is of paramount importance to the entire industry.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended March 17 and a comparison with the previous week follows:

	Mar. 17		Mar. 10	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	14,715	.....	14,865	.....
Burbank	44,160	.....	43,860	.....
Other Osage Fields	30,140	.....	30,680	.....
Cushing and Shamrock	21,145	.....	21,115	.....
Bristow	24,735	.....	24,790	.....
Seminole	300,520	.....	304,210	.....
Northern Miscellaneous	158,310	.....	156,190	.....
Southern Fields	58,170	.....	57,685	.....
Total Oklahoma	651,895	.....	653,395	.....
West Texas—				
Hendricks	182,681	.....	169,693	.....
Yates	45,857	.....	45,037	.....
Remainder	117,514	.....	120,720	.....
Total West Texas	346,052	.....	335,450	.....
North Louisiana	36,895	7,870	36,860	8,025
Arkansas	20,125	65,770	19,785	66,545
North Central Texas	128,313	.....	128,151	.....
Texas Panhandle	71,320	.....	71,710	.....
East Central Texas	24,219	.....	24,603	.....
Kansas	110,345	.....	113,235	.....
Total Mid-Continent Area	1,389,164	73,640	1,383,189	74,570
Gulf Coast	.....	124,858	.....	116,337
Southwest Texas	.....	27,019	.....	27,279
Eastern	103,000	.....	104,000	.....
Rocky Mountain Area	80,600	.....	77,311	.....
California—				
Santa Fe Springs	37,500	.....	38,250	.....
Long Beach	120,000	.....	119,500	.....
Torrance	2,000	17,000	2,000	17,000
Huntington Beach	57,500	.....	57,750	.....
Dominguez	12,500	.....	12,500	.....
Inglewood	18,000	11,500	19,000	12,000
Ventura Avenue	45,000	.....	52,000	.....
Seal Beach	39,500	.....	39,500	.....
Remainder of State	60,000	185,000	59,500	185,000
Total California	392,000	213,500	400,000	214,000
Total United States	1,964,764	439,017	1,964,500	432,186
Grand Total	2,403,781		2,396,686	

Total Increase, 7,095 Bbls.; Light Oil Increase, 264 Bbls.



Demand Strengthens Group 3 Market

Gasoline Advances and Other Oils Firm Except Naturals. Heavy Consumption of Fuel Oils. Further Increases Expected

By W. T. Ziegenhain

Refined oil prices in Oklahoma were generally unchanged for the week with the exception of natural gasoline which sold at the low for this year. Refinery gasolines moved at a fair rate. Some refiners advanced their quotations during the week, but there was not a general following. A rather wide range of prices exists on all grades.

Kerosene is being more freely offered, but there has been no tendency to reduce prices. The domestic demand in the agricultural sections is beginning to be felt.

Distillates moved very slowly from most plants, but a few refiners say they are receiving more orders just at present than their production and account for the increased number of orders as due to the sudden cold weather in the Chicago territory and the low margin of stocks being held by jobbers. Gas oil was scarce and the price is expected to advance shortly. Cracking plants are said to be able to operate at a better margin and refiners are not willing to sell their stocks or production. A continued advance in the gasoline prices would certainly bring about an advance in the gas oil market.

Fuel oil is also showing stability. The increased consumption in the automotive and steel industries is taking a great share of the spot fuel and many refiners have sold their entire output for the month in advance. The predicted recession of fuel-oil prices has failed to arrive up to this time, and so long as refiners do not increase their runs in order to take advantage of the better gasoline prices, the fuel market will probably be maintained at its present level.

REFINED MARKET BAROMETER

Higher refined oil prices and good movement of all oils has prevailed at practically all refining centers. Natural gasolines in the Mid-Continent were an exception to this, however, and prices were generally at the low for the year. Cased gasoline has been advanced at New York and tank car prices have been fractionally advanced at most points. Kerosene has shown a good movement from Mid-Continent refineries and the export market was firm along the coast. Distillate sales were very few. Gas oil is scarce at most points and, with gasoline prices continuing to strengthen, this product may be expected to advance for use as charging stock for pressure stills. Fuel oils remained very firm but there is little thought of higher prices. Lubs moved slowly from all sections except from the Gulf where large export orders were filled. Wax continued strong in both the Eastern and Oklahoma markets.

Mid-Continent.—Gasoline prices were higher. Natural gasolines weakened to the low for the year as consumption failed to equal production and manufacturers were obligated to add to an already heavy stock. Fuels were very firm and gas oils may be expected to advance shortly.

Atlantic Seaboard.—A stronger domestic and export demand gave added strength to the market and gasoline was generally advanced. Fuel continues plentiful but prices remain unchanged. Kerosene did not move as fast as the other oils.

Pennsylvania.—A good movement of practically all oils gave the market a very firm tone and while there were but few price changes the market is in a good position to fractionally advance immediately.

Houston.—Export orders for large volumes of lubricating oils reduced stocks at many plants to a comfortable margin and the market in general is viewed with optimism. Fuels continue plentiful and represent the only weakness in the list.

Chicago.—The greater demand for practically all products gave the market a strong tone and gasoline prices were generally higher. Fuels moved at a good rate. The distillate sales have fallen off considerably.

California.—A greater demand for gasoline for export allowed for higher prices. Natural gasoline strengthened. Lub oil prices were adjusted but in general the changes were made upward.

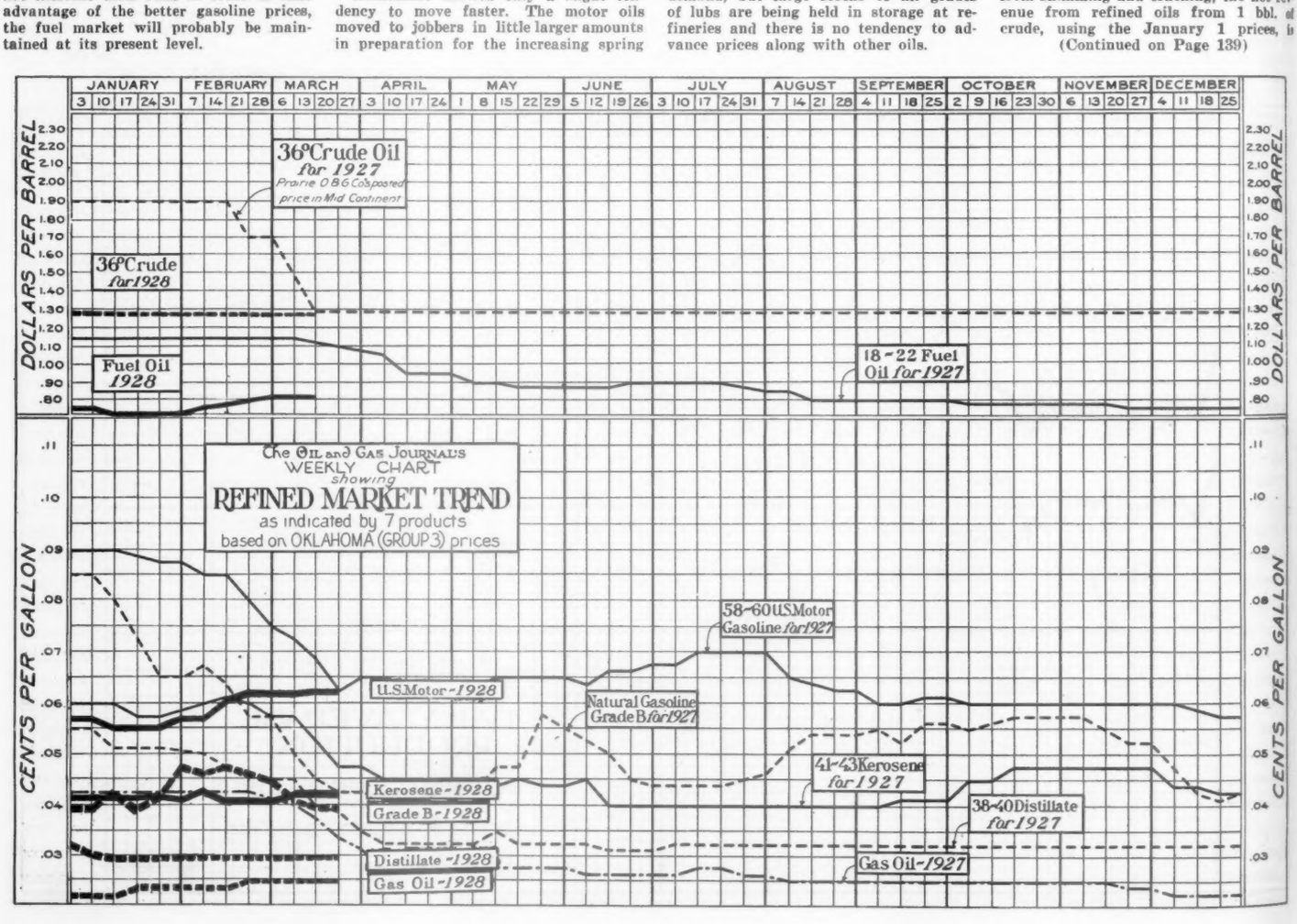
Lubricants showed only a slight tendency to move faster. The motor oils moved to jobbers in little larger amounts in preparation for the increasing spring demand, but large stocks of all grades of lubs are being held in storage at refineries and there is no tendency to advance prices along with other oils.

Wax inquiries were greatly increased over the week and the prices were correspondingly higher. The domestic consumption is increasing and as the various industries now using wax are scattered throughout the entire country, the Mid-Continent refiner finds himself in a better position to get a large portion of the business. In the past, the great bulk of the wax production was exported from the East and Gulf Coasts and the Mid-Continent refiners were so far removed from the point of consumption they were forced to more or less take what business was left and at a price closely dependent upon that set by the eastern refiners.

Cracking Operations

There is much discussion about the possibility of greatly increased crude runs increasing cracking operations, etc., as a result of the gradual strengthening of prices, but the better margin to the refiner has not yet become sufficient to be inducive to change operations materially. As a basis of comparison, the revenues from the refined products made from a barrel of Seminole crude refined in the Mid-Continent under the price structure prevailing January 1 and the present were taken. In the meantime, U. S. Motor gasoline has increased in price from 5¾ cents to 6¼ cents as the minimum of the range, kerosene has remained the same, lubs the same, and fuel oil has advanced from 75 cents to 80 cents. Assuming representative yields from skimming and cracking, the net revenue from refined oils from 1 bbl. of crude, using the January 1 prices, is

(Continued on Page 139)



Foreign Markets for Oil Equipment

Upward Movement of Exports of American Oil Field and Refinery Apparatus Notable; Significant Gain in 1926

(Specially Contributed)

Export markets for oil-well machinery and refining equipment are exceedingly difficult to gauge with accuracy, due in no small measure to the ambiguity of the export trade classifications applied to many items making up the general classification which the average oil man applies to all the equipment used in oil fields and refineries.

Due to the fact that most of this machinery and equipment is purchased through the purchasing department of the parent oil company in the United States, many of the manufacturers of such supplies do not originally regard these sales as export trade. Many of the companies, however, realize the wisdom of acquainting the field men with the newer types of machinery and apparatus as these are developed and spend considerable money in the services of foreign traveling representatives who are continuously in the field.

Again, since some 72 per cent of the world's oil produced is within the United States, many manufacturers are content to exploit the domestic market and not follow the recognized prestige which American equipment has in foreign fields. Even with stiff competition from German and British manufacturers in the European, Near Eastern and Far Eastern fields, the superiority of American oil-field and refining machinery necessitates its use where considerations other than price are involved.

Among the more important items listed in the foreign trade statistics published by the Bureau of Foreign and Domestic Commerce are well-drilling apparatus, other oil-well machinery and casing and oil-line pump.

Central and South America have taken the greatest portion of our exports of these items in recent years as is seen from the accompanying tables.

In addition to affording some gauge as to potential machinery markets, the above statistics are an excellent basic index of the relative amounts of petro-

(Continued on Page 139)

Big Market for American Goods

Developments in foreign oil fields provide a good market for American-made oil field machinery and equipment. While the accompanying article gives a good idea of the extent of this business in the past, figures contained therein do not show the total amount involved in the exports of oil country goods. For instance, the Amtorg Trading Company in New York during 1927 is reported to have purchased almost $5,000,000 worth of oil well and and refinery equipment and one other American company shipped about $12,000,000 worth to Venezuela.

TABLE 2—CASING AND OIL LINE PIPE

	1926	1925	1924	1923	1922
Costa Rica	$.....	$.....	$ 82	$ 12,073	$ 1,763
Guatemala	254	.....	4,152	5,750	3,948
Honduras	2,760	309	18	2,788	456
Nicaragua	111	280	746	423	12
Panama	1,460	55,745	14,531	29,383	21,896
Salvador	800	14,263	.....	11,639	185
Mexico	1,069,133	1,404,419	1,985,604	1,741,191	910,739
Bermuda	40	13	302	641	115
Barbados	3,549	.....	1,286	38,346	35,252
Jamaica	19	336	699	3,412	767
Trinidad and Tobago	379,353	263,486	150,590	274,097	139,443
Other British West Indies	49	63	60	3,650	741
Cuba	12,954	10,102	32,023	45,386	13,146
Dominican Republic	667	790	2,299	6,731	6,911
Dutch West Indies	336,758	205,402	167,348	5,134	1,373
Haiti	7,872	5,503	13,702	6,866	135
Argentina	1,170,058	675,445	232,652	314,435	317,048
Bolivia	84,824	93,770	11,334	63,219	799
Brazil	16,528	6,707	12,061	25,119	107,835
Chile	23,603	33,075	51,099	39,773	33,251
Colombia	1,117,907	3,060,387	230,827	282,350	130,424
Ecuador	9,230	15,253	25,114	31,733	5,014
British Guiana	2,237	5,941	24	1,140	.....
Dutch Guiana	3,342	931	.....	.....	.....
Peru	1,129,438	144,813	791,309	930,337	631,907
Uruguay	1,296	839	5,107	6,552	1,233
Venezuela	4,041,452	1,662,817	1,284,235	756,566	191,202
All others	3,183,173	2,444,823	3,960,372	2,403,035	1,961,912
Total all countries	$12,598,867	$10,105,512	$8,977,576	$7,041,769	$4,517,507

TABLE 3—UNITED STATES EXPORTS OF INDUSTRIAL MACHINERY

Class—	12 months ended December 1926	1927
Power-generating, except electric and automotive:		
Steam engines*	$9,598,325	$9,699,909
Internal combustion engines†	5,937,499	4,521,858
Water wheels and turbines	253,559	212,412
	$15,789,383	$14,434,179
Construction and conveying machinery	$17,046,987	$19,125,849
Mining, oil-well and pumping machinery:		
Mining and quarrying	$14,857,106	$13,185,618
Oil-well	15,305,808	16,842,638
Pumping, power‡	5,272,595	5,550,491
	$35,435,509	$35,578,737
Metal-working machinery:		
Power-driven	$14,316,274	$20,345,478
Other	4,551,248	5,051,314
	$18,867,522	$25,396,792
Textile, sewing and shoe machinery:		
Textile	$10,400,268	$11,465,553
Sewing, industrial	3,123,043	4,368,951
Shoe, except sewing	1,353,210	1,718,347
	$14,876,521	$17,552,851
Other industrial machinery§	$54,602,467	$68,178,783
Total	$156,618,389	$180,267,191

*Excludes locomotives.
†Excludes engines not over 10 horsepower; also engine accessories and parts.
‡Excludes windmill pumps; also parts of pumps.
§Excludes domestic washing machines; includes mine cars and station and warehouse motor trucks.

TABLE 1—WELL DRILLING APPARATUS—OTHER OIL WELL MACHINERY

	1926		1925		1924		1923		1922	
	Well Drilling Apparatus	Other Oil Well Machinery	Well Drilling Apparatus	Other Oil Well Machinery	Well Drilling Apparatus	Other Oil Well Machinery	Well Drilling Apparatus	Other Oil Well Machinery	Well Drilling Apparatus	Other Oil Well Machinery
Costa Rica	$.....	$ 58	$ 4,522	$ 4,522	$ 20	$ 34	$ 1,010	$ 3,035	$ 23,186	$ 2,714
Guatemala	1,178	6,050	.....	1,000	221	.....	326	92	.....	123
Honduras	215	951	3,973	262	40	330	144	2,471	14	578
Nicaragua	260	.....	.....	1,063	.....	6,162	25	350	.....	.....
Panama	6,052	9,658	20,458	6,521	20,875	30,052	4,531	7,571	43,199	2,002
Salvador	476	888	9,510	1,115	28,289	4,679	.....	712	.....	.....
Mexico	377,492	206,934	505,158	599,509	483,072	433,703	314,141	545,324	534,984	441,159
Bermudas	2,993	.....	.....	.....	.....	910	.....	.....	.....	87
Barbados	130	1,357	26	289	2,281	75	15,131	23,251	582	27,724
Jamaica	40	7,184	.....	.....	82	.....	.....	1,604	15	.....
Trinidad and Tobago	196,444	126,618	71,961	95,617	105,860	42,261	13,709	138,281	37,189	144,853
Other British West Indies	2,064	253	.....	.....	736	.....	144	555	300	445
Cuba	10,174	5,395	3,464	7,224	6,128	8,371	2,282	7,610	1,738	7,109
Dominican Republic	2,285	10	3,444	969	3,964	527	547	5,960	287	25,072
Dutch West Indies	7,120	42,994	342	31,235	3,650	19,800	1,381	35,482	.....	3,566
Haiti	606	2,435	15,530	5,096	582	1,377	297	650	5,434	251
Argentina	758,123	523,961	661,136	241,111	268,556	133,480	76,936	120,592	313,209	294,471
Bolivia	43,082	5,854	112,105	4,803	13,092	1,550	1,738	19,517	.....	1,278
Brazil	12,697	2,318	15,431	2,117	32,972	1,689	2,408	10,180	20,108	5,834
Chile	7,008	5,890	5,564	2,267	29,601	5,489	2,992	3,263	.....	1,411
Colombia	234,652	633,843	176,188	190,311	314,573	78,912	83,607	186,769	62,780	144,005
Ecuador	23,156	68,416	15,870	62,441	10,888	51,782	2,225	63,469	2,456	47,969
British Guiana	98	11,560	309	10,196	.....	1,187	.....	1,102	.....	163
Dutch Guiana	.....	3,229	.....	90	.....	18	.....	.....	.....	.....
Peru	392,228	618,421	164,744	263,385	114,108	278,280	49,104	380,353	12,846	179,961
Uruguay	9,404	643	207	925	668	.....	.....	2,669	.....	.....
Venezuela	2,641,037	2,016,041	1,215,286	1,072,406	464,188	371,691	140,289	469,895	465,187	243,932
All others	3,562,859	2,712,974	2,486,845	2,152,522	1,553,405	1,468,955	942,520	1,939,835	118,274	1,014,582
Total all countries	$8,291,873	$7,013,935	$5,492,073	$4,756,996	$3,457,851	$2,941,314	$1,655,487	$4,970,592	$1,641,848	$2,589,209

Consumption Versus Overproduction

Slight Increase in Automobile Travel Will Solve Petroleum Industry's Greatest Problem. Time Ripe for Campaign

By Andrew M. Rowley

The big purpose of the petroleum industry today is to provide gasoline for automobiles and motor trucks.

It performs that service with far more efficiency, probably, than is shown in the operation of any other industry. Gasoline in all quantities required is available at most street intersections and nearly every cross road in the country.

To render this service, the petroleum industry has invested $11,300,000,000 in wells and producing properties, refineries, filling stations, pipe lines, tank cars and tank steamers.

No other industry is beset by such hazards as confront those engaged in the production, transportation, refining and distribution of petroleum and its products. More than one-fourth of all wells completed in recent years have been dry and over $1,000,000,000 was lost in drilling dry holes during the past 12 years.

Each year the petroleum industry expends more than $500,000,000 in drilling wells to procure the crude oil needed by the refineries to manufacture gasoline. This is in addition to vast sums spent for leases, lease equipment, pipe lines, refineries, tank cars and tank steamers, clerical help, salaries of executives, officials and field men and replacements to equipment.

Yet, despite the big losses incurred in the effort to find petroleum and make it available in suitable form for motorists, and the millions spent each year to produce crude and refine it, gasoline is, and has been for years, the cheapest of all commodities, United States government figures showing this.

No Effort to Sell Product

Producers of crude oil have lost money because of low prices prevailing especially during the past year and longer due to more crude oil being produced than was consumed. Refiners have lost money and, in many instances, have been forced out of business because of the extremely low prices prevailing for gasoline.

But inconceivable as it may seem, the petroleum industry—the second largest business enterprise in the world—and representing, as above stated, an investment of more than $11,000,000,000, never has made a real effort to sell its chief product—gasoline.

It developed as the need for its products grew. The invention of the internal combustion engine and the vast growth of the automobile business provided a market for gasoline, The petroleum industry provided all the gasoline the motorists asked for, but when it came to a matter of selling gasoline—not merely being an order taker—and in creating a greater demand for gasoline, the petroleum industry seemed too busy getting more crude oil production and making more gasoline to give much thought to increasing the requirements for this product.

Excess production of crude oil together with the fact there are about 473,000,000 bbls. of light and heavy crude oil in storage and over 36,000,000 bbls. of gasoline in tanks have resulted in extremely low prices, so low as to result in heavy losses to many companies.

Stocks Depleted in a Year

Yet, if every motorist in the United States drove his car only 3 miles more each day, every gallon of gasoline now in storage would be consumed within a year.

With stocks of gasoline depleted, how much talk would there be of excess crude oil stocks or overproduction of crude oil. It is more likely the talk would be along the line of getting more crude to satisfy the greater demand for gasoline. Even a novice in the oil business knows what that would mean—better prices, more drilling, increased refining—in short, prosperity for everyone connected directly or indirectly with the petroleum industry.

It requires 2½ bbls. of refinable crude to make a barrel of gasoline. To replace the 36,000,000 bbls. of gasoline now in storage would require 90,000,000 bbls. of crude. During last year, the greatest period of overproduction of crude oil ever witnessed by the petroleum industry, 67,000,000 bbls. of crude oil were placed in storage.

In other words, if every automobile driver last year had driven his car just 3 or 4 miles more a day, and crude oil production had remained the same, the petroleum industry might have withdrawn from storage 23,000,000 bbls. of crude oil instead of storing 67,000,000.

Since November 1, 1926, crude oil prices have been reduced throughout the United States, the average gravity in the Mid-Continent territory being cut from $2.29 a barrel to $1.28 a barrel or a difference of $1.01 a barrel to producers. Prices of gasoline at the refinery have been cut a little more than 3 cents a gallon.

What a different story would have been told had the industry been withdrawing crude from storage instead of adding to stocks.

Easy to Increase Travel

When it is considered what a simple matter it is to increase travel by automobile, the only wonder is why the petroleum industry did not start a movement of this kind long ago. Especially in view of the fact other industries have been busy for years doing the one thing which would have placed the petroleum industry on a high plane of prosperity and made periods of overproduction a blessing instead of a plague.

Early each spring railroads throughout the United States begin to advertise in newspapers, magazines and trade journals showing beautiful scenery along their routes, luring trout streams with enthusiastic fishermen "pulling out big ones"; mountain scenes which immediately attract; beautiful resorts with all forms of recreation; and historically interesting points. There is immediately created in the minds of the readers a desire to visit these places and that desire usually crystallizes into trips over the railroads doing the advertising.

How many radios would have been sold in the United States if the big manufacturers had not developed programs so entertaining that all wanted to listen to them? Every newspaper in the country prints these radio programs daily. Radios would be useless so far as the home is concerned were it not for these programs.

The same thing is virtually true at this time of the automobile. It is almost useless as a means of recreation because not one person in 100 knows where to drive for pleasure.

How many times has the average family desired to take a short trip on Saturday or Sunday or over the week-end and then passed up the trip because of not having easily available information as to where to go, what kinds of roads would be encountered, what accommodations might be expected en route, what could be seen along the way, and what attractions various routes offered?

Want to Go, but Where?

It becomes tiresome to drive over the same streets in the cities and over the same roads in the suburbs, but the bulk of automobile driving in the cities comes within that category—not because people don't want to go elsewhere, but simply because they do not know where to go.

Many trips would be taken if persons knew where to go, what kind of roads they might expect and if they had a vision of what they might see en route.

If any person reading this has never felt he would like to take a drive somewhere but did not know where to go, he is an exception, in my opinion.

The prime motive which prompted 23,000,000 persons in the United States to buy automobiles was to provide comfort and recreation for themselves and their families. Driving the car to business is neither. With traffic so congested in the large cities, it is more work than pleasure to drive a car to the office. But when the day's work is ended, there is a desire to get away from the traffic jam, out into the country and enjoy a ride.

Chiefly at week-ends when the Saturday half-holiday and Sunday provide ample time for short trips, is there a desire to visit other places, take the wife and youngsters somewhere where all can fish or swim or camp out, or to see something different than row after row of buildings or houses.

What effort has the petroleum industry made to satisfy this desire upon the part of these 23,000,000 motor car owners? None.

Advertising a certain brand of gasoline does not increase travel one mile.

The big idea is to increase travel, which means greater gasoline consumption.

Automobile owners are desirous of traveling more. They are anxious to take

MAGNOLIA PETROLEUM COMPANY
PETROLEUM, PETROLEUM PRODUCTS
SALES DEPARTMENT

Dallas, Tex., March 19, 1928.

The Oil and Gas Journal,
Tulsa, Okla.

It is the writer's personal opinion that a properly conducted campaign of education, or rather information addressed to the general automobile public, showing the way for more travel in the automobile would no doubt increase the consumption of gasoline and motor oils, the result of which would obviously accrue to the benefit of the oil industry.

It is the writer's opinion that the subject is one that may properly be handled to a more or less extent through the A.P.I. and other local organizations, as the proposition must be sold to the industry.

Yours very truly,
E. P. ANGUS.

THE PRAIRIE OIL AND GAS COMPANY

NELSON K. MOODY, President.

Independence, Kans., March 19, 1928.

The Oil and Gas Journal,
Tulsa, Okla.

There is not only good common sense in it, but, in my judgment, a co-operative advertising campaign, solely for the purpose of increasing the sales of gasoline and other petroleum products, put on by the whole industry, in which the motor industries could well afford to participate, might, and probably would, solve the whole problem. If the advertising in the oil industry and the motor industry could be concentrated for a time along general lines to increase the use of automobiles, using a part of the funds now employed in lauding the good qualities of one brand as against other brands, such a campaign would not cost any more than is now being spent in advertising.

If the whole industry would stop talking overproduction and begin talking underconsumption, and, through advertising, could induce motor car owners to drive their cars seven or eight miles more per day, there would be no surplus.

Very truly yours,
N. K. MOODY.

trips over the week-end and visit places providing beautiful scenery or recreation. All that is needed is to tell them where to go, how to get there and what they may expect en route and at the destination. They will do the rest.

Will Solve Biggest Problem

Increased automobile travel not only will solve the petroleum industry's greatest problem—that of overproduction and burdensome stocks—but it will spread prosperity to other industries. Automobile manufacturers and dealers naturally will benefit from a greater sale of cars and quicker replacements; the states will benefit from increased revenue from gasoline taxes; more roads will be built as a result of this increased revenue from taxes; rubber manufacturers will benefit from increased sales of tires; hotels and resorts will gain from a greater number of visitors—in fact, there is a never-ending list of benefits which will be derived from simply telling motorists where to go and how to get there.

Every section of the United States has its places of interest. Attractive trips averaging anywhere from four hours to three or four days can be laid out from any city in the country. Road maps are available everywhere. It is an easy matter to get photographs of views along all routes. It would require but a few minutes to write a brief description of points of interest to be visited. Place all these—a map of the route, pictures of scenes and a description of what is to be found—before the owner of an automobile and members of his family and you at once create a desire upon their part to take that drive. When Saturday or Sunday comes, the gasoline tank in the car is filled and the family is off on the trip.

Any trip planned would cover more than 22 miles. Yet, if every car owner drove his car 22 miles a week more than he does now, present stocks of gasoline would be entirely wiped out in one year. If half the car owners took a 44-mile trip once a week, more than what they now drive, the same result would be accomplished.

It would probably not require any more money to provide this service to motorists than is now spent in advertising certain brands of gasoline. With the enlarged demand such as would be created by such advertising, every refiner would have a good market for his product and would not be forced to the kind of advertising which tends only to pull a customer from a competitor without increasing the total sales of gasoline.

Reach the Vacationists

Persons throughout the United States already are beginning to figure on where to spend their vacation. Practically every person taking a vacation owns an automobile. Many used their automobiles several years ago to take vacation trips and became discouraged over the condition of roads encountered. As a result, these persons have resolved "never again to take a long trip by automobile."

These automobile owners need to be educated in regard to the vast improvements made in roads during the past few years; to the fact hundreds of millions of dollars have been spent to surface main roads; to an understanding of how the Federal Government has aided with large appropriations and how states have collected hundreds of millions of dollars in the form of gasoline taxes for the primary purpose of improving roads.

Traveling by automobile now is entirely different to what it was only a few years ago, due to paved roads and surfaced highways which now extend from one end of the country to the other. Also because of great improvements made in automobiles by the manufacturers, making the cars ride more easily and comfortably. Making 300 miles a day now is easy and not tiresome, although many car owners still judge present conditions by what they encountered several years ago.

Persons going on vacations need their cars more now at the recreation points than ever before. There is no place in the United States where a person can go for a vacation but what the pleasure of his trip would be enhanced very greatly if he had his own car with him. An automobile is a necessity at practically every resort and vacation center.

Show the man planning a vacation that he has good roads to where he wants to go and he will at once start checking the old bus over to get it in shape for the trip. It is cheaper for a family to travel by automobile than by train and far more comfortable when the roads are in good shape. They can stop where they please, take their own good time, enjoy the scenery en route and need not be bothered by having to start at a certain hour.

There is ample time for the petroleum industry to obtain full benefit this year from this plan to increase gasoline gallonage. Distributors in the cities can advertise points of interest in their own trade territories. Distributors through the recognized marketing divisions of the United States can advertise trips throughout these areas and a national campaign can take care of the longer trips covering more than one marketing division.

But it is not a time for any such attitude as "Let George do it."

Prosperity Within Grasp

Inauguration at this time of the movement to stimulate greater use of the automobile may mean prosperity this year instead of the continued uncertainty regarding the effect of overproduction. It is estimated conservatively the success of such a movement would result in increased values to the oil industry alone representing hundreds of millions of dollars during a year.

Owners of the 300,000 small producing wells, representing the backbone of crude-oil production—old settled production—who now are operating on such a small margin a few cents one way or another means a little profit or a loss, would benefit largely from the success of the plan. These operators cannot stand lower crude oil prices; in fact, many at this time are figuring whether they will be better off to plug their small producers and go into some other business.

Create a greater demand for crude and these small operators will continue to pump their wells and assure the public a steady supply of oil from these producers. They must have higher prices if they are to survive. Higher prices are dependent upon supply and demand. Efforts have been made to more nearly equalize supply and demand, but quicker results and greater benefit will accrue from increasing the demand.

With an investment of more than $11,000,000,000 and a yearly business of $1,000,000,000, the petroleum industry can well afford to put its best thought into this plan to protect its interests.

THE EMPIRE COMPANIES

REFINING DIVISION
OF
EMPIRE OIL & REFINING CO.

Tulsa, Okla., March 14, 1928

The Oil and Gas Journal,
Tulsa, Oklahoma.

The editorials "How to Get More Gallonage," and "Creating Demand," which have appeared in The Oil and Gas Journal on March 1 and March 8 should have the serious consideration of the entire oil industry. The idea is a splendid one, and if properly furthered by the oil and other allied industries great benefit would no doubt result therefrom.

Co-operative moves by all branches of the oil industry are being advocated and some being put into effect. All this is constructive, but necessarily it will take a considerable length of time to get results that will improve conditions, while the idea you are advocating in the above-mentioned editorials could be quickly brought about.

When one visions the increased consumption of motor fuel that might be used as the result of a properly directed educational and advertising campaign of this kind, one can also easily vision how it would help to quickly relieve an unsatisfactory situation.

The Journal should again be commended by the industry for its continued effort to bring about a return to normal and profitable conditions.

Yours very truly,
P. W. MISKELL,
General Manager.

Texas Club Will Advertise Tours

Beauties and Historical Spots of Lone Star State to Be Presented to Motor Car Owners There and Elsewhere

By James H. Dameron

FORT WORTH, Tex., Mar. 20—The Highway Club of Texas has a plan in which Texas refiners are evincing keen interest from the standpoint of increasing the gallonage of filling stations. This club has completed survey work for a Scenic Motor Tour of Texas, according to William T. Wheeler, Fort Worth, general manager of the club.

Such a plan as revealed by Mr. Wheeler promises to awaken the interest of motorists to long tours through Texas beauty and historic spots. His idea would not be to encourage afternoon drives on more or less congested highways but tours that would require anywhere from one day to four weeks to complete.

Such tours naturally would increase gasoline consumption throughout the State. While not proposed as one of the remedies for the industry's present dilemma, it is expected, as a result of proposed advertising, the tour would bring many from neighboring States into Texas, and for that reason refiners are watching the developmets.

Mr. Wheeler has a copyrighted map of the Texas desigated highways. This map will be published in colors to aid the motorist. But, to make it more attractive and to sell the tour on a greater scale the map will be landscaped. Beauty spots and interesting data will be "landscaped" on the map, and the routes, in colors, will be printed through the most interesting sections.

A "Landscaped" Map

As an example, Lake Worth and its adjacent scenery photographed from the air, could be reduced and scaled into the map and the highways leading to it would be shown. In addition "loop tours" are to be shown on the map and they will consist of routes around cities and towns rich in historical lore and affording other interests to the tourist.

Expert engineers are at work gathering data for the tour. The sponsors have brought to light many spots of interest in the State of which little is heard. These will be featured in the tour suggestions.

No trouble is being experienced in finding interesting tours of the State to carry tourists as well as Texans to spots rich in natural beauty and traditions of Texas history. The State has a total of 265,896 square miles in its boundaries, 262,398 square miles in land and the remaining 3,498 square miles is water. From the northeast corner of the State to the southwest it is a distance of 860 miles by rail and 779 miles by air line and from the northern boundaries to the southern it is 1,120 miles by rail and 800 miles by air line.

In those boundaries there is a wealth of material for advertisers to draw upon in encouraging tours. On the Gulf Coast, the semitropical climate, salt water fishing, natural palm gardens, the fertile Rio Grande Valley and beaches will be featured. On the eastern side of the State and extending down to the coast, the grandeur of the pine forests will be pictured.

The tour will take the motorists through the vast grazing ranges of the Panhandle and its oil fields as well as through the Palo Duro Canyon. Going south the tour will lead through the fertile agricultural belt and oil country of Central Texas and into West Texas where Chamber of Commerce publicity men are starting to advertise the mountains, canyons, game fishing in the rivers, climate and numerous other attractions, including the desert country.

The Highway Club is taking advantage of the fact that several big conventions are to be held in Texas cities during the current year and some are of national scope. It is planned to have the details of the Scenic Motor Tour worked out before the convention dates. Literature and maps are to be broadcast with the view of inducing many of those attending the conventions to travel by automobile. Maps will also be distributed to motorists entering the State.

Many in Fort Worth who are interested in the sales end of gasoline and oils are of the opinion the suggestion in The Oil and Gas Journal of March 1 on increasing gallonage, contains constructive thought and will lead to a change in direction of advertising.

It is believed the proposed Texas Scenic Tour will be brought before the public in an appealing way and will create a desire to travel. Some of those interested in sales are planning to follow up the combination landscape and highway map with more detailed reviews of interesting sections.

Those same men will probably use the combination map as a base and suggest short tours to appeal to those residing in cities and who seldom take more than a short afternoon drive. In this manner they expect to increase gallonage.

In the language of Mr Wheeler, it is not the intention of the Highway Club to have visitors from other States see Texas' back doors as they ride through on railroad trains but to see Texas' front yards.

Col.E.H. Hilpp New I.O.M.A. President

Kentuckian Succeeds L. V. Nicholas as Head of Marketers at Chicago Meeting. Definite Change in Organization

By J. B. Waldo

CHICAGO, Mar. 20.—Col. E. H. Hilpp, vice president and general manager of the Kentucky Consumers Oil Co., Louisville, Ky., has been elected president of the Independent Oil Men of America, succeeding L. V. Nicholas, who has headed the association activities for a number of years. The results of the election which took place yesterday at the opening day of the annual convention, were announced this morning.

The election of Colonel Hilpp, who has been active in the association for many years, marks a definite change in the association's organization.

The meeting was totally unlike a convention of the usual type, no exhibits, no banquets, simply a gathering of business men to work together for the common good in surmounting the many problems which confront them in the daily routine of their business. There were men present from all parts of the country and from all branches of the independent industry. There was something evident of the feeling that selecting a successor to President Nicholas was a grave task, but after the morning of the second day the thought was that the difficulty had been successfully passed.

New Organization

The new plan permits of a permanence of effort and direction that is wanting in an organization which is directed very largely by a single official. By this new plan the board of 28 directors will be in the final control but not meeting at frequent intervals a small and more active body becomes necessary. This consists of the board of trustees to which is now delegated many of the broad powers hitherto exercised by the president.

This board of trustees is composed of five members all selected by the directors, a president and four other members. Three of the trustees, that is the president and two trustees, will be selected each year, the election of the trustees other than the president being for two years.

The active detail management of the workings of the organization will be entrusted to a paid manager trained in association work. It is stated that such a man is in view and that he is not an oil man.

The election by the members of directors was as follows: Refining directors, J. Mc E. Ames, Kanotex Refining Co., R. B. Jones, Panhandle Refining Co., and J. H. Whitaker, Omar Refining Co.; other members, H. W. Dodge, Milwaukee, Wis.; R. E. Gerkins, Dayton, Ohio; E. H. Hilpp, Louisville, Ky.; W. G. Hudson, New Orleans, La.; C. L. Maguire, Chicago; J. H. Porteous, Middleton, Conn.; and C. S. Rosenthal, Chicago. Most of these were re-elections. C. L. Maguire of the Northland Oil Co., Chicago, was chosen chairman of the board.

New Officers

The new board then chose the following officers: President, E. H. Hilpp, who is also chairman of the board of trustees; vice president, W. A. McMillan, Lindsay McMillan Co., Milwaukee, Wis.; trustees, W. F. Burke, Covington, Ky.; A. L. Lommel, Waterloo, Iowa; L. D. Pierce, Providene, R. I.; and C. S. Rosenthal, Chicago. The announcement of the new directors and officers was made at the opening of the meeting on Tuesday morning.

Following the announcement of the new directors and officers at the opening of the morning session on the second day, Colonel Hilpp, the new president, made a brief address in which he thanked the members for the honor conferred upon him and requested that the retiring president continue to conduct the meeting. C. L. Maguire then spoke briefly and in like tone. Both stated that there would be no change in the plans or methods of the association but that the fundamental policies would be built up and strengthened wherever possible.

Code of Ethics

President Nicholas then read a resolution passed by the board of directors to which he stated there had been no dissenting vote. This was referred to in subsequent discussions as a code of ethics or as a program for the guidance of the organization. It was stated to be the result of the accumulated experience of the directors and officers during the past year. It had to do with the eligibility for membership, the first essential being absolute basic independent competition based on a source of supply that was in no way related to any of the major companies. It was provided that under certain circumstances and as a temporary expedient a member might be permitted by the trustees to arrange for supplies from some nonindependent source. Full identification of the members' stations and equipment by the use of the emblems and signs was to be essential to membership. Every member must agree to market the specification products of the organization. Members must all belong to the coupon exchange and clear their coupons through the association. In buying, members are to secure their supplies as far as possible from fellow refinery members. The restriction of members to a locality and the giving of exclusive territorial franchises must be a final aim of the organization.

Complete Identification

These points had been touched upon in the retiring president's address on the opening day. As a further means of complete identification the adoption of a color scheme to be worked out was endorsed in this code. Following the reading of the recommendations a number of officers and members spoke briefly but enthusiastically regarding the organization. It was again and again asserted that the association had made a great growth and had been of much benefit to the business of those speaking. Every member was urged to do his full share in promoting the interests of the organization and in backing up the plans of its officers and directors.

One of the most active members said that he missed something from the old-time conventions in the present meeting and he hoped for his part that a way would be found to hold such gatherings which might include not only members but every possible and prospective member and the manufacturers of equipment and supplies. No response was made to this suggestion at the time.

Aviation Considered

At the beginning of the afternoon session a brief talk was made by representatives of the aviation industry regarding a plan to mark bulk stations for the benefit of the flyers. It was stated that it was frequently difficult for a flyer from his plane to follow the roads but that it was always possible to trace the railroads. As most members had bulk plants located on railroads it was suggested that these bulk plants be so marked as to give certain information to the flyers. Among the information that would be helpful was the presence of a suitable place in case a landing was necessary. Also if supplies of aviation fuel and oil were carried in stock. There was considerable discussion of this and other topics.

The final address of the day was made by C. Y. Hinchey, the director of advertising, who gave a well-thought-out paper on full identification, the modern black magic, having to do with the need for and the good results obtained by the widest possible use by members of the emblems and trade-marked brands of the organization.

The final day of the meetings is largely devoted to lubrication topics. The committee on lubrication is in session at all times and consulting with the members regarding their various problems, urging them to make a wider use of the opportunities for profitable business in the lubricating branch of the industry.

Hilpp Opens Meeting

Chairman of the board, E. H. Hilpp, made a brief address of welcome. He said that this was the most important meeting that the reorganized association had ever held. He explained that the board had assembled early on Saturday and had remained in almost continuous session until Monday noon attending to the great bulk of business that had come before it and clearing the way for the new board. He also acknowledged the great assistance that the retiring president had been to the board at this time and during the entire year. He had no declaration of policy other than that the organization stood for the stabilization of the industry along lines that would insure to all a mutually fair measure of success.

Mr. Hilpp was followed by R. A. Overholzer, assistant to the president who spoke on the "Spread Eagle, Past, Present and Future." He said that at the last meeting speaking on the same subject

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California Mecca for Geologists

Big Attendance at First Convention on Pacific Coast. R. S. McFarland Being Boomed for President

By Special Correspondent

SAN FRANCISCO, Calif., Mar. 20.—More than 500 members of the American Association of Petroleum Geologists are gathered at San Francisco to attend the annual convention of that organization. Special cars from Tulsa, Fort Worth, Denver, Houston and other cities have brought these members to the first annual meeting the society has ever held in California. Many of the visitors from the Mid-Continent arrived in San Francisco yesterday and spent the time until the convention opened basking in the well-known California sunshine and enjoying the equally well-known California fruits, flowers and scenery.

The technical sessions of the convention begin tomorrow, but two important committees held their initial meetings today. These were the Committee on Research headed by K. C. Hea'd, and the Business Committee of which C. R. McCollom is chairman.

The first session of the convention tomorrow morning is to be opened by an address of welcome by Mark L. Requa, who was federal oil administrator during the war, and a response by C. G. Gester, president, American Association of Petroleum Geologists. Technical sessions take up the rest of the day and continue all day Thursday. On Thursday the Society of Economic Paleontologists and Mineralogists, a group of the parent organization, holds its meetings concurrently. Thursday evening will be held the big social event of the convention, a dinner dance at the Fairmont Hotel for the members and their guests.

McFarland Next President?

Friday concludes the presentation of papers, and the principal business session and election of officers will be held in the afternoon. Nominations will be made Wednesday and the balloting done Thursday. Election results will be announced at the business meeting Friday afternoon. Around hotel lobbies wherever a group of members meet there are rumors current that the men from California, Texas, the Rocky Mountain district and elsewhere are backing R. S. McFarland as their choice for president. Mr. McFarland, who is head of the geological and land departments of the Twin State Oil Co., has had much experience in association affairs, havings been at one time vice president of the organization.

An attractive program of entertainment for the visiting ladies at San Francisco has been arranged. Tomorrow afternoon a tea and fashion show is to be held at the Women's City Club. On Thursday they will be taken for a ride through the city, across to Berkeley and around the bay, visiting the University of California and Stanford University, with lunch at the Lakeside Country Club. Friday the ladies will be conducted through a famous jade and crystal room and will visit many interesting Chinese buildings and shops.

Los Angeles End of Week

The entire convention group will depart Friday night for Los Angeles on a special train on the Southern Pacific Railroad. Saturday morning the group will leave the Los Angeles headquarters for a field trip through the oil fields of the Los Angeles Basin, viewing Inglewood, Rosecrans, Torrance, Dominguez, Signal Hill, Seal Beach, Santa Fe Springs and Montebello. That night a banquet followed by an entertainment and dance will be given at the Mack Sennett motion picture studio. This feature is being regarded with the keenest anticipation by the male visitors, who are practicing intricate dancing steps at very opportunity.

The annual golf tournament for the J. Wallace Bostick trophy concludes the convention activities and will be held at the Riviera Country Club on Sunday, and the many golf bags seen in arriving luggage promise a large entry list. Several cities are actively soliciting next year's convention, prominent among which are Amarillo, New Orleans, Philadelphia, Detroit and Indianapolis. New Orleans is sending a special representative from the Chamber of Commerce to promote its interests.

Repressuring Seminole Big Problem

Difficulties Due to Fine Grained Sand, Big Recovery by Gas Lift and Great Depth to Sand Cool Enthusiasm

By J. L. Dwyer

Two recent attempts to repressure the Wilcox sand in the Seminole Field have proved to be failures, and have caused much speculation as to what may be anticipated from this stratum in the Greater Seminole area. The attempts have also revealed considerable information regarding the economics of repressuring oil sands.

At a time when every lip in the Mid-Continent holds the question, "What may be expected from Seminole in the future?" the efforts at obtaining additional oil from the sand which has already produced 168,000,000 bbls. of high-gravity crude are worthy of some attention, and the problems and difficulties encountered in the repressuring work will very likely furnish additional armor for more attacks upon the Wilcox sand in this general region.

Speaking in generalities there can be no complaint voiced regarding the productivity of the Wilcox horizon at Seminole. A field which has an average yield per acre of 13,125 bbls. in 19 months must be recognized as exceedingly prolific, and that is what the Seminole Field has done up to March 1, 1928. There have been approximately 12,800 acres under production, although the present area of productivity does not embrace that much territory.

While there are specific instances which influence the thought that the use of the air-gas lift method of producing oil in this field will eventually cause more oil per acre to be produced, considering the field in its entirety, it seems that the introduction of the lift system at Seminole will, when final figures are available, be found to have speeded up the output without any attendant increase in yield per acre. It tends to hasten the point at which the wells cannot be operated at an economic profit, and as one engineer put it, the funeral of the field has been advanced nine years, for the oil has been produced nine times as rapidly as the normal methods of production which were experienced in other Wilcox sand operations not using the lift.

Other Examples Cited

There are several instances of other pools of Wilcox sand oil, having the lift hasten their end, most notably, the Wewoka area on the line between Seminole and Hughes Counties, Oklahoma, and the Thomas and Tonkawa Pools in Kay County, Oklahoma. The Tonkawa deep-sand operation was the first pool in the State to have the air lift applied, and it was installed after the pool had been producing for two years from this horizon. The Wewoka Pool had a different history, and the lift was installed early in its development. The results of both of these fields have failed to show any appreciable increase in the ultimate yield per acre which may be recovered by the lift, although there are specific instances in spots particularly rich in oil saturation which do show an abnormal recovery under this method.

It has been apparent to every reader of Seminole news that many wells have been plugged within the past 60 days. The total number of producing wells was 1,085 three weeks ago. Since that time, there have been 22 wells completed into the sand, and today the field has 1,080 producing wells. It is noticeable that 27 wells have been plugged and abandoned within the three weeks' period. The story of these wells varies. Some were light wells which never had over 200 bbls. per day at any time during their life, and others have been large wells making an initial output of 1,000 bbls. Their period of life ranges from five months to 18 months, and a close scrutiny of their records fails to reveal any one theory or condition which might result in a general classification being formulated for future calculations. The oil simply stops coming into the shot hole, and the well reaches its limit of economic production.

There is one statement which might be made in this connection; the wells offsetting wells which opened a new pool, or a new area of a producing pool show the tendencies to become depleted first. It is also significant that the discovery wells in all of the pools, and the wells which have opened new parts of producing pools have made exceptional producing records, and are still making some oil. The effects of drainage which in the Greater Seminole area is believed to be an unusually important factor, may therefore be taken as having severe effects upon offsets, and this is one reason why operators have been so zealous in protecting their property lines when production was found adjacent to the leases.

At this time the 1,080 wells in the area are making their output as follows:

Wells on air-gas lift	486
Wells flowing	56
Wells pumping	351
Wells swabbing	74
Wells off production	113
Total	1,080

Much Lift Machinery

With almost 500 wells equipped with compressor and other lift machinery, the repressuring of the Wilcox sand in this field seemed to be exceedingly attractive. The feature believed to have worked the greatest influence against the success of repressuring is the fine texture of the sand. Its fineness offered a great amount of capillary resistance to the repressuring medium which was introduced into the sand. Both air and gas were used as repressuring mediums in the Seminole experiments, and the working pressures used varied from 50 to 200 pounds with the majority of experiments run at the latter figure.

In the normal repressuring work done successfully in other fields, the Marietta drive was the most used. This was done by using certain wells as key wells, and introducing the air or gas down them, and having its force penetrate through the sand body, forcing the fluid towards other wells on the properties under process.

This system was attempted at Seminole but the very fine grain of the Wilcox sand offered too much resistance. For purposes of comparison, two grades of cloth may be considered, one having a fine weave and the other an extremely coarse weave. Should both fabrics be used for straining a certain amount of liquid, the coarsely woven fabric would permit the liquid to go through much more easily than the fine textured fabric; and this offers a certain degree of similarity to the work of the repressuring medium in fine and in coarse grained sands.

Capillary Resistance

The resistance to movement of oil through the fine textured sand was accentuated by the high capillary resistance together with the Jamin effect which caused difficulty in moving the alternate arrangements of oil globules and gas bubbles in the fine interstices of the sand.

The Jamin effect (so termed after the discoverer) is a high resistance to fluid movement caused by this phenomenon, and may be illustrated by a simple experiment. Fill a fine capillary tube with globules of oil and bubbles of air or gas arranged alternately, and then try to blow them out of the tube. A strong pressure may be used without budging the arrangement, and the pressure necessary to move them is related to the number of globules. Each globule is a unit independent of the others, and offers resistance accordingly. The Jamin effect is a phase of capillary resistance, and capillary resistance and capillary retention are now recognized as the principal factors which retard the recovery of oil.

The presence of water in the sand is another factor which has tended to prevent successful repressuring work at Seminole. The water increases emulsification, and also increases the resistance to the repressuring medium. It is believed from laboratory work, that water causes more resistance than gas globules, as may easily be imagined when one considers the well known antipathy of oil for water. There are 328 wells making water in the Seminole region at this time, and approximately one-third of the sand is water saturated. This has been very detrimental to repressuring and helped to eliminate it from the Seminole picture. While repressuring work is an excellent method of retarding the encroachment of water in an oil sand, once it is present in any important quantity in the sand, it mitigates against successful repressuring. As one producer who has done much work in this connection stated, "When a man's leg is cut off, its awful hard to put it back on again."

Successful repressuring work is synonymous with inefficient initial recovery from a sand, and since the Seminole initial recovery has been so high this is another reason for the failure of the drive. The fields which have furnished the poorest results in repressuring have all had a good initial yield; and from experience and also from laboratory studies, there seems to be a question if any economic increase may be expected where the initial yield per acre has been over 8,000 bbls.

Great Depth Another Hindrance

The lift problem is another item in connection with repressuring work which bears trouble in relation to the depth. In the most successful repressuring work, the depths of the producing sands range from 400 to 1,000 feet; while in the Seminole area, the 4,200-foot depth means additional lifting costs. The most used method of handling the oil recovered through the repressuring work is by pumping the wells, and it is the exception rather than the rule to flow repressured wells by artificial devices This latter has been done, but pumping is mostly used. Pumping any field which has 4,200 feet production is a trying task, and Seminole is no exception. It has been stated that the average time which pumping may be done at Seminole is 56 hours, after which the rods must be pulled and cups changed.

To add this cost to the cost of repressuring work would mean a vast increase in a process which must count its pennies if it is to be done profitably, and the pumping method is believed to constitute another stumbling block to repressuring work at Seminole. There are 351 pumping wells in the Greater Seminole area now, but the lifting costs revealed by an inspection of the producers' accounts shows that pumping is expensive.

Repressuring work is, in a sense of the word, salvaging oil from a sand which has been subjected to a good percentage of depletion. The rate of production from repressured sands is low, and fractions of a barrel must be counted. In this work in the shallow fields, economy is stressed, and when the process shows 50 and even in some cases 100 per cent increases on 3-bbl. wells with slight cost, it is a desirable manner of production. It should be remembered that this work is done on wells having an average depth of 700 feet. To gain the same results from similar conditions in a sand having a depth of 4,200 feet would show little profit, as the pumping costs would easily absorb the difference.

In spite of the large number of engines and compressors now in the field, no company or individual has been exceptionally enthusiastic over repressuring Seminole. If it is at all feasible, very high pressures will be required, and that means high cost which the current price of crude oil will not permit. Any future attempts at this work in Seminole will probably stress automatic control equipment and some original hookups for flowing very light wells probably through small tubing. In the meantime, the pluggers will have plenty of work.

OKLAHOMA AND KANSAS OPERATORS TO DISCUSS CURTAILMENT PLANS

A meeting of all producers in the Oklahoma-Kansas division of the Mid-Continent Oil & Gas Association has been called for Friday, March 23, and will be held at the association headquarters at Tulsa. The purpose of the meeting is to consider plans for handling any potential production which may result from wildcat drilling in Kansas or Oklahoma.

For some time there has been a feeling that the Mid-Continent Oil & Gas Association should have some permanent body or committee to keep conversant with operations in outlying regions which have productive potentialities, and it is possible that at the meeting this week such a committee will be formed.

The duty of the body would be to function in a manner somewhat similar to the Seminole advisory committee which has aided the umpire in handling the Greater Seminole situation. This body would work out the most acceptable plans of operation for any new pool, and by remaining familiar with the prospects of each region which threatens, would be well equipped to make recommendations to the best advantage of all interested parties. It is thought the only possible manner of handling each threatening region is to operate it as an individual proposition; as conditions in each area differ greatly.

It is recognized that the pools now producing are limited factors, and those in which drilling is in full swing cannot be checked, but the real potential damage is thought to be located in the wildcat wells; and the attention of the producers will be directed towards this idea.

Two Meetings Last Week

Two meetings held by producers of the Greater Seminole region and Oklahoma-Kansas division of the Mid-Continent Oil & Gas Association last week in Tulsa had for their aim the limitation of drilling, and the holding in check of production which may result from wildcat drilling all through the producing and potential fields of both states.

The meeting of the Seminole operators was held first, and at this meeting Charles H. Burke, Commissioner of Indian Affairs of the Department of the Interior, was a visitor. Commissioner Burke heard the problems of the oil industry discussed, and heard some comment upon

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Fourth Test Opened Sorrento Dome

New Coastal Field East of Mississippi River a Good Example of Efficacy of Geophysical Explorations

By Neil Williams

NEW ORLEANS, La., Mar. 17.—In opening the McElroy (Sorrento Dome) Pool, Ascension Parish, Louisiana, the Gulf Refining Co. of Louisiana has set a record which has been equalled or bettered only by a few salt dome operators. Within eight months from the time the location was staked for the first test, the company had a well flowing initially at the rate of more than 4,000 bbls. daily. This includes one month during the summer when operations were shut down.

There are a few salt dome fields on record which have been opened by the second, third or fourth tests, but these are extremely rare, and to those familiar with uncertainties and irregularities of salt dome operations this would seem next to the impossible.

But, in addition to being the first Gulf Coastal Field east of the Mississippi River, the first to which New Orleans or Baton Rouge can lay claim, and one which necessitated pioneering into the heart of one of South Louisiana's dense cypress swamps, the McElroy Pool is one which was opened by only the fourth test drilled.

Although it generally is admitted that luck plays a leading part in salt dome drilling, the finding of oil so quickly at Sorrento Dome also is attributed to the increasing efficiency of geophysical work and the accuracy with which companies are now able to locate and outline domes. So accurate was the checking at Sorrento Dome that the "shooting" crews figured within 20 feet the depth at which the cap rock was found in the discovery well.

Result of Geophysics

The Sorrento Dome was located as a result of seismograph operations of the Gulf Refining Co., which company has been most active in geophysical exploration along the Gulf Coast. In its work, which has carried it into virtually every section of southern Louisiana, the company's "shooting" crews entered the vast swamps of Ascension Parish in the latter part of 1926 and after several months of calculating and checking determined on the location and outline of a salt dome in the SE of Section 15-10s-4e, about 2½ miles due north of McElroy, a siding and flag stop on the Louisiana Railway and Navigation Co. Railroad, 50 miles northwest of New Orleans and 35 miles southeast of Baton Rouge.

As described in a preceding article, this is in a very low swamp, reached only by a soggy plank roadway laid through a narrow, winding clearing cut through the underbrush from McElroy to the camp and wells. McElroy itself is reached only by the one railroad, whose right of way is practically the only strip of dry ground. The closest automobile road is at Sorrento, a lumber town, about 7 miles up the railroad from McElroy, which occupies a spot of high ground at the edge of the swamp.

Following the determination of the dome's location, the company made a location for its first test, the No. 1 United Land Co., on what was considered about the high point of the dome in the SE cor. of the SE of the section. This test, while drilling at 1,640 feet blew out and with an open hole, cratered, swallowing the derrick, rig and everything except two boilers. All still are in the hole of the crater shown in an accompanying picture.

A second test then was started 200 feet southeast but after drilling to 1,750 feet this was abandoned as dry. A third location was made 1,000 feet due north of No. 1. This encountered some gas showings around 300 feet but it also was abandoned as dry after going to a total depth of 2,100 feet.

Fourth Test a Success

The fourth test, the discovery well, 600 feet west of No. 1, was started last December and a month later found the top of the cap rock at 1,627 feet, where a 6⅝-inch casing was set, and when brought in at a total depth of around 1,660 feet, the well made an estimated 15,000,000 feet of gas with a showing of oil. It first was thought this well would make only gas and it was shut in for several days so a gauge could be made, but when opened it started to make oil.

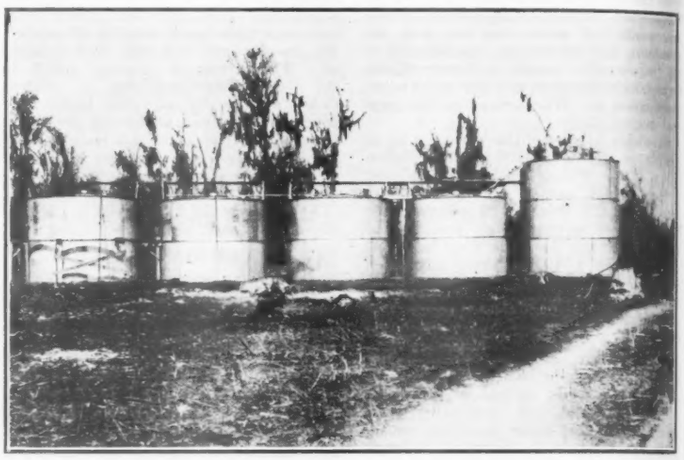
Various estimates have been made on the initial flow, one Gulf official figuring that if the well had been opened fully it would have made as high as 15,000 bbls. The initial flow generally is placed at between 4,000 and 5,000 bbls. This well was allowed to flow only a short time when it was shut in until a pipe line could be laid a distance of 3,100 feet across the swamp to a large earthen reservoir, which had been built 20 years before as a logging pond for a large saw mill there.

Following the completion of this well, a location was staked for No. 5, which is 600 feet west of No. 4. At this writing this test has casing cemented on top the cap and will have been tested before this appears in print. The No. 5 ran considerably lower than the No. 4, which might be to its disadvantage but cores have shown heavily of oil.

In providing storage, the company was fortunate in having the large earthen pit already excavated and in fair condition despite the fact that it had not been

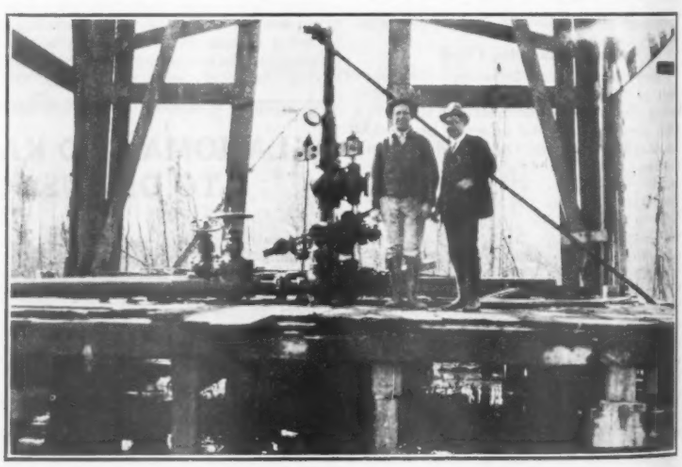
(Continued on Page 92)

Six-inch stream of oil flowing from Gulf Refining Co.'s Sorrento Dome discovery well into earthen pit 3,100 feet away.

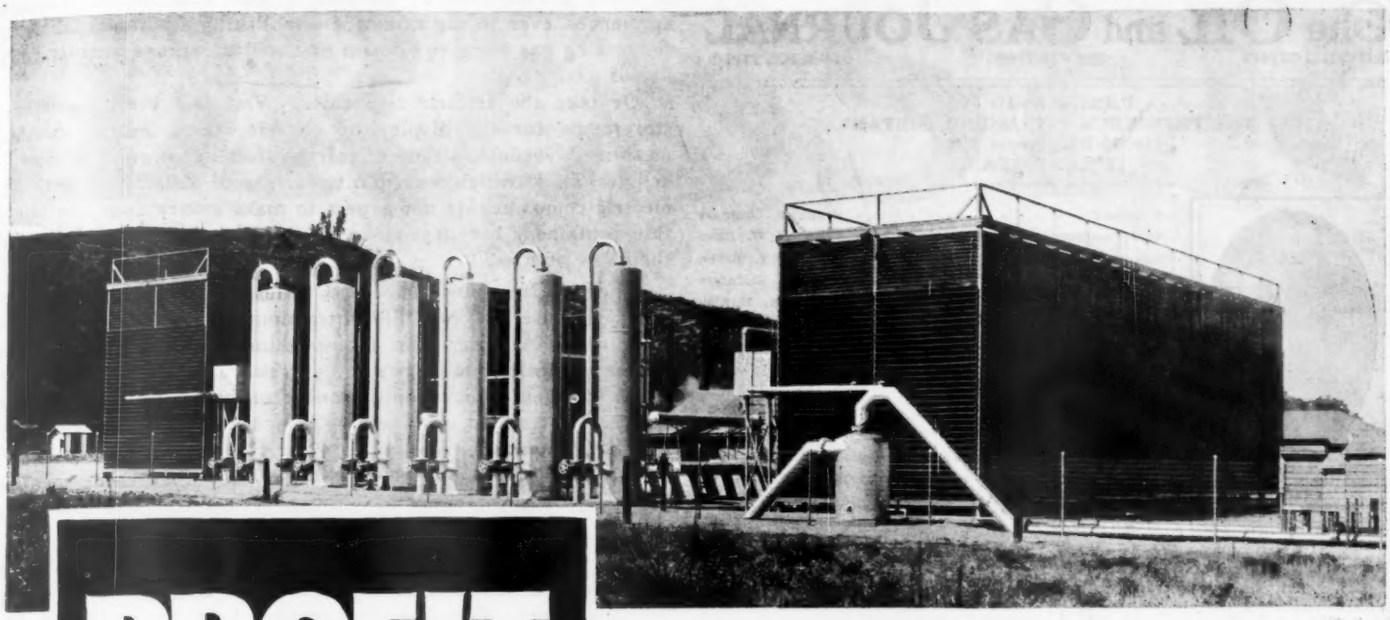


Steel storage erected at the Sorrento Dome Field. A large gas separator is being set up to the right of the tanks.

Water filled crater of Gulf Refining Co.'s first Sorrento Dome test which blew out. In this hole are the derrick, rig and everything except two boilers.



Joe Caddell (left), field superintendent at Sorrento, and W. C. Clemons, general field superintendent of production for the Gulf Refining Co., on the Gulf Coast. They are standing on the floor of the discovery well's derrick.



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A PERMANENT REMEDY

A year ago it was a common saying that nothing short of a miracle could ever get the oil industry together on a plan of curtailment as a remedy for overproduction.

Today the industry is so completely sold on curtailment as a cure for overproduction that we are actually in danger of thinking of curtailed operations as an ideal condition.

Curtailment is a means, not an end.

Reduced operations are a temporary necessity to keep production in line with consumption but a progressive industry cannot be content "pinched in." It must keep on expanding. A business that shuts down to save money will not make any.

The permanent remedy for overproduction is to stimulate consumption.

So while production is being held in check in Oklahoma, Texas and in California the oil industry cannot afford to sit back and wait for consumption to overtake supply as eventually it is bound to do.

There is no sense in producing more than can be consumed but there is just as little in acting as if the rate of consumption is unalterable.

There was a time when most people had only one pair of shoes at a time. Probably a majority had but one presentable suit or dress. But that did not mean that one pair of shoes or one suit or one dress to a person was the limit in possible demand.

That was in the days before modern advertising had been discovered, before it was found that consumption could be enlarged by creating demand.

The gasoline business of today is still very much in the one-pair-of-shoes age. The customer drives up and buys what he wants without any effort on the part of the salesman except to get the patron to switch from one brand to another. It seems to be assumed that since a tank will hold only so much if the customer says "fill 'er up" that is all there is to be said or done.

Well, let us take the natural gas or even the manufactured gas business and see if that is the way they go about it. Are they content with selling just as little gas as the customer may use in the ordinary way?

They are not. Gas companies everywhere are doing their utmost to increase their sales by interesting their customers in gas-using appliances, even to the extent of establishing a national laboratory for testing gas using equipment that will encourage a wider public use of gas.

Or take the electric companies. You find them maintaining storerooms for the display of electric lamps, heaters, washing machines, vacuum cleaners, refrigerators, fans, and a host of articles, all of which lead to a wider use of electric current. The electric companies do not expect to make money from the sale of this equipment but depend on the greater use of current which their sale assures.

The electric railways in most cities are similarly found operating pleasure parks or like attractions to induce people to use their cars. A department is maintained by these companies to induce organizations to use these grounds for picnics or parties. These companies have only transportation to sell and they are intensely interested in increasing their sale of it by such means of stimulating travel.

Mention has already been made of what the railroads have been doing for years in alluring people to visit summer and winter resorts and thereby enlarging their passenger traffic.

The gasoline business has never given any thought to this sort of thing because it has usually counted on having enough demand without effort. Gasoline consumption kept on increasing from year to year with the growth of motoring and it does not seem to have occurred to anyone in the gasoline business to think whether there was any way of inducing people to use more gasoline.

With motor oil it was different. But the automobile manufacturers started that by warning car owners that the oil should be changed so many miles. That precept has been so thoroughly ground into the average motorist that everyone pays attention to it nowadays where in the early days it was often neglected with consequent loss to the car owner as well as to the lubricant makers.

Yet with this example of what popular education could do in increasing the sale of lubricants nothing was thought possible towards enlarging the sale of motor fuel. Getting a share of the new business or of the old appears to have been the limit in salesmanship.

If the gas and electrical businesses had not bestirred themselves in interesting consumers in the use of gas and electric appliances does anyone suppose these industries would have reached their present totals of sales of gas and current?

The gasoline salesman cannot fill up a tank that is already full but he can by a little practical salesmanship induce the motorist to empty that tank more quickly and hurry back for more.

Like the trolley company he can promote the "riding habit" among his customers by showing them what they are missing out on the good roads and helping them seek pleasurable trips and enjoyable vacation spots.

Say the average motor vehicle runs 15 miles a day and the total consumption of gasoline at present is approximately 300 million barrels a year? Suppose by attractive advertising of beauty spots and interesting places, scenic roads and pleasant highways, the 20,000,000 motorists of the country could be induced to take one extra drive for pleasure of only 20 miles a week, Sundays or week ends, it would mean a 20 per cent increase in gasoline consumption.

Or, if that is expecting too much, suppose that only one-half the motorists were interested, that would mean a 10 per cent gain in gasoline consumption or as much as the ordinary annual increase.

If only one car owner in four were induced to take a 20-mile extra drive once a week through attractive advertising by the oil companies of inviting neighborhood rides it would mean a gain in consumption of 630,000,000 gallons a year.

These other industries that have adopted means of stimulating use to increase their sales of gas, current or transportation, have scored more than a 5 per cent gain from the effort or they would not be continually expanding it.

The oil industry has been spending millions on wildcats, on research in field and plant, in producing, refining and transportation improvements, but up until now it has not spent a cent in

(Continued on Page 39)

DRESSER

Dresser Couplings are standard equipment for high pressure natural gas lines and also for service lines in the natural gas industry. They work equally well on high and low pressure,—withstand any pressure that the pipe will carry,—take care of all movement due to vibration or expansion and contraction,—and they will remain permanently tight.

for every mile of pipe

from Production

to Consumption

S. R. DRESSER MFG. CO.
BRADFORD, PENNA.

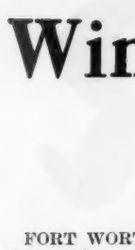
COUPLINGS

Dominate!

Winkler County Record 189,000 Bbls.

Hendricks Pool Extended to the East. West Texas Production Reaches 346,052 Bbls., a Gain of 10,602 Bbls.

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal



FORT WORTH, Tex., Mar. 19.—For the past few weeks Winkler County has been the feature of West Texas reports and this week is no exception to the rule. Rising to a new peak of 189,000 bbls. and averaging 182,000 bbls. for the past week, the Hendricks Pool sent the total West Texas production up to 346,052 bbls. and gave it a gain of 10,602 bbls. in daily average over the previous week. Of more importance, though, was the extension of the field to the east by the Independent Oil & Gas Co.'s No. 1 McCabe in Section 36, Block B-5. Monday the well was drilling at 2,698 feet and made 35 bb'ls. during the past 24 hours.

Plans to curb the field's production suffered a delay when the Winkler County Proration Committee found the stumbling block in the way of crude contracts being filled with Winkler County crude. This committee held a meeting in Fort Worth Saturday and adjourned subject to call, probably Friday or Saturday of the current week.

Roughly, it is estimated that the total crude contracts in the Hendricks Field amount to around 11,000,000 bbls. To have at hand accurate information concerning these contracts when the Winkler proration committee meets this week, the Texas Railroad Commission sent out letters to all producers and pipe-line companies operating in that field requesting information concerning the exact status and amount of all contracts now in force.

Under the plan by which it is proposed to prorate the field, the entire producing area will be divided into units of 40-acre tracts. Each unit will be divided into the available market outlet to determine the allowable production from each 40 acres.

Most of the new activity in Hendricks is confined to the northern part of the field, where new production in a big volume recently extended the field a mile to the north.

Air-Lift Experiment

During the past week Humble Oil & Refining Co. made an experiment with air lift that showed interesting results. That company's No. 1 and 2 Hendricks, on the B lease, in the N half of SE Section 29, Block B-5, have been making between 2,000 and 3,000 bbls. of fluid daily. Last week both wells were put on air lift, the air being introduced between the casing and the tubing, and the wells flowed through the tubing. During the 24-hour test the wells made 6,800 bbls. of fluid, which when treated showed 3,088 bbls. of net oil.

Both of these wells are in the extreme southeast part of the field and were among the first to show water. The test was made for one day only. Under the proposed proration plan, none of the wells will be produced by air or gas lift.

Pure Oil Co. drille dits No. 2 Grisham-Hunter, in the SE SW of Section 41, Block B-5, deeper and got a well making 600 bbls. per hour. This well was completed at 2,889 feet, making 500 bbls. per day, 14 per cent water. It was drilled on down 548 feet in the lime and had the big pay at 2,932-38 feet.

Yates Pool

In the Yates Pool of Pecos County, Oregon Oil Co.'s No. 1 Yates, in the NW cor. of Section 58, Block 1, I.&G.N. Survey, and about a half mile southeast of production, created considerable excitement when it had 200 feet of oil in the hole at 1,400 feet. The excitement subsided, however, when 1,000 feet of sulphur water rose in the hole from 1,430 feet, where the well is now shut down. This well had a showing at 1,369 feet.

Phillips Petroleum Co.'s No. 1 Smith, which recently extended the northwest part of Yates about a half mile west, is reported to have been shut in as a result of water encroachment.

Kirby Petroleum Co.'s No. 1 Tippett in Section 40, Block 194, had a sand at 520 feet, and 500 feet of oil rose in the hole in four hours. This well is on the northwest side of the pool and about a mile west of Gulf Production Co.'s No. 8 Yates, which showed for a good well in the shallow trash zone. Gulf company's No. 8 swabbed around 600 bbls. one day of low-gravity crude that showed about 18 per cent b.s. and water, which treated out readily. That pay was cased off, however, and the Gulf well is drilling on down for the big pay. Kirby company's well is also to be drilled on down to the big pay.

Big Gas Well

California Co. brought in one of the biggest gas wells thus far drilled in Yates and, incidentally, the well is a big producer. It is No. 15 Yates, Lease 1, Section 34, Block 194, and an inside well. It has been shut in at 1,190 feet after gauging 51,000,000 feet of gas and flowing at the rate of 360 bbls. per hour for nine hours.

Operations in the Yates Field are slowly dwindling to a low point of development, which now is at a point where wildcat operations in Pecos County are close to the number of operations in the Yates Pool. The usual number of big producers were in the completion report for the past week.

Humble Oil & Refining Co. made a half-mile eastern extension from the nearest south producers in the World-Powell Field in Crockett County last week. That company's No. 2 Paul J. Sorg in the SW cor. of Section 61, Block BB, G.C.&S.F. Survey, swabbed 140 bbls. in 12 hours from pay at 2,591-2,607 feet. No water is showing in the oil.

Irion County

In Irion County, P. E. Hill and associates' No. 1 Horney, NE cor. Section 2, Block 3, H.&T.C. Survey, which had a show of oil in the sand at 1,270 feet, has been put on the pump and made 9 bbls. of fluid, approximately 25 per cent of which was water. The well is to be deepened to the Big Lake pay, which is expected to be found at present in this area at around 1,600 feet. The oil in this test is around 36 gravity, and it is expected the strike will stimulate activity in that section of the county. It is reported that Wesley West and associates have made a location 6 miles west and 4 miles north of No. 1 Horney, and in Section 19, Block 1, H.&T.C. Survey.

Interest in Fisher County is centered around two wells. East of The Texas Company's producer, Cranfill & Reynolds and Sun Oil Co.'s No. 1 J. A. Young in Section 208, Buffalo Bayou, B.C.R.R. Co. Survey, swabbed 115 bbls. in eight hours from pay topped at 3,106 feet. No water is showing. Five-inch casing was cemented at 3,103 feet and the well is drilling in sandy lime at 3,129 feet and is going on down to the second pay encountered in The Texas Company well.

Rainey and associates' No. 2 Mabray in Section 56, H.T.&B. Survey, bails one bailer of oil and three to four bailers of sulphur water per hour from 3,023-27 feet. This well is 7 miles southeast of The Texas Company well. It is probable that the operators may deepen the well. Its present total depth is 3,031 feet.

Gulf Production Co. has made a location three-quarters of a mile west of its discovery well on the Waddell ranch. No. 4 Waddell, to be located in the C SW SW of Section 3, Block B-25, will be started up in the near future. The discovery well is making around 25 bbls. daily, and the Gulf company owns acreage solidly around that well within a radius of about 2 miles.

Big Spring-Roberts Line

It was reported a few days ago that the Rio Grande Oil Co. was considering building a pipe line from Big Spring in Howard County to the Roberts Pool in the southern part of the county, where deep production was discovered a few weeks ago. Rumor now has it that the company has denied plans of building the pipe line, but is in a deal with other interests to construct a line into that field. Presumably a loading rack would be built at Big Spring and the crude shipped to El Paso.

Daily average pipe lines runs out of West Texas during the past week were around 140,200 bbls. Gulf Pipe Line Co. was running 23,482 bbls. through its line to Ranger; Humble Pipe Line Co. was running 38,289 bbls. through its line to Comyn and 52,350 bbls. through its line to Ingleside; and Magnolia Pipe Line Co. was running 16,064 bbls. through its line to DeLeon. The average local refining consumption in West Texas was close to 25,000 bbls. daily. The tank-car movement was 70,000 bbls. daily,

WILDCAT OPERATIONS IN WEST TEXAS

Week ending March 17, 1928

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co.'s No. 1 W. J. Harris, C SE Sec. 12, Blk. A-46, Public School Land, elev. 3,167 ft.	Top salt 1,690 ft.; shut down 2,970 ft. for casing.
BORDEN COUNTY	
Dixon Creek Oil Co.'s No. 1 Clayton & Johnson	Top salt 1,250 ft.; drlg. 1,420 ft.
Marland Oil Co.'s No. 1 G. E. McDavid, C SW Sec. 156, Blk. 25, H.&T.C. Sur., elev. 2,310 ft.	Top lime 2,410 ft.; shut down 2,810 ft.
Marland Oil Co.'s No. 1 Alexander Murphy, C SW Sec. 66, Blk. 25, H.&T.C. Sur. (3,250-ft. test)	Location.
BREWSTER COUNTY	
Cowden & Bowser's No. 1 Jackson & Harmon, C N half Sec. 1, Blk. 331	Shut down 130 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 967 ft.
Mid-Kansas O. & G. Co.'s No. 1 Turney, Sec. 77, Blk. 213, T.&St.L. Sur.	Drlg. 3,465 ft.
Reese & White's No. 1 Kimbale, C NE Sec. 204, Blk. 9, G.H.&S.A. Sur.	Drlg. 1,500 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 252, 7 mi. S of Alpine	Shut down 1,700 ft.
Wilcox & Anderson's No. 1 Gage, Sec. 8, Blk. 300, T.C. R.R. Sur.	Drlg. 1,985 ft.
COKE COUNTY	
W. H. Brown et al's No. 1 W. L. Foster, SE cor. Sec. 142, Blk. 2, H.&T.C. Sur., elev. 2,222 ft.	Drlg. 3,570 ft.
Lipan Oil Co.'s No. 1 S. M. Conner, Sec. 71, Blk. 2, H.& T.C. Sur.	Show oil 1,224-34 ft.; shut down 3,375 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 2,739 ft.
CONCHO COUNTY	
C. R. Dutton and Hughes Drlg. Co.'s No. 1 W. O. Shultz, Sec. 127, Blk. 72, T.&N.O.R.R. Sur.	Drlg. 1,000 ft.
Parks & Lawson's No. 1 Schults	Show oil 925 ft.; shot with 40 and 30 qts.; no results; shut down 1,500 ft.
The Exploration Co.'s No. 1 Hartgrove, Blk. 240, J. Schouch Sur., elev. 1,718 ft.	Set 10-in. 760 ft.; shut down 940 ft.
Sartain Oil Co.'s No. 1 Evridge	Spudded and shut down.
CRANE COUNTY	
Crane Dev. Co.'s No. 1 J. R. Mosley, S cor. Sec. 18, Blk. 6, H. & T. C. Sur.	Top salt 819 ft.; show oil 3,017 ft. drlg. 3,192 ft.
Gulf Prod. Co.'s No. 49 J. T. McElroy, Sec. 201, Blk. F, C.C.S.D.&R.G.N.G.R.R. Sur.	Drlg. 160 ft.
Lockhart et al's No. 1 M. M. Treanor, Sec. 28, Blk. 1, H.&T.C. Sur.	Drlg. 410 ft.
CROCKETT COUNTY	
Anderson & Williams' No. 1 University, SE cor. NW NW SE Sec. 19, Blk. 47	Location.
V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I. & G. N. Sur.	Shut down 2,110 ft.
R. B. Coyle's No. 1 H. M. Halff, C Lot 18, Sec. 70, Blk. 1, I.&G.N. Sur.	Location.
Dixie Oil Co.'s No. 1 George Thompson, Sec. 72, Blk. 1	Location.
J. S. Cosden, Inc., No. 1 Paul Perner, SW cor. Sec. 36, Blk. 2, I. & G. N. Sur.	Drlg. 1,050 ft.
Henshaw and McMann Oil & Gas Co.'s No. 1 W. Owens, C NW Sec. 17, Blk. G.G., G.C.&S.F.R.R. Sur.	Drlg. 960 ft.
Humble O. & R. Co.'s No. 2 P. J. Sorg Est	Total depth 2,590 ft.; swabbing.
Van McPhail's No. 1 George Thompson, C 10-acre tract No. 31, Sec. 70, Blk. 1	Location.
Van McPhail et al's No. 1 George Thompson, C 10-acre tract No. 22, Sec. 70, Blk. 1	Location.
Osage Oil Corp.'s No. 2 Halff, 1,200 ft. down river from No. 1 in Sec. 70, Blk. 1, I.&G.N. Sur.	Drlg. 1,000 ft. (cor. depth).
Osage Oil Co.'s No. 3 H. M. Halff, Sec. 70, Blk. 1, I.& G.N.R.R. Sur.	Skidding rig.
W. W. Donnelly & Young's No. 1 Massey, Sec. 29, Blk. U-V	Shut down 600 ft.
W. R. Simmons' No. 1 University, 150 ft. N of C S line SE Sec. 1, Blk. 14	Drlg. 150 ft.
World Oil Co.'s No. 1 Schneeman-B, Sec. 50, Blk. BB, G.C.&S.F. Sur.	Top salt 1,070 ft.; hole full salt water 2,210-15 ft.; set 6-in. 2,540 ft.; drlg. 2,830 ft.; hole full sulphur water; shut down 2,910 ft.
M. B. Wyrick et al's No. 1 H. M. Halff, Sec. 68, Blk. 1, H.&G.N.	Drlg. 690 ft.
Young & Donelly's No. 1 J. M. Shannon, C Sec. 11, Blk. 9, D.&S.E. Sur.	7,000,000 ft. gas at 1,662 ft.; shut down 1,775 ft.
Young & Donnelly's No. 2 J. M. Shannon, Sec. 13, Blk. 10, G.C.&S.F.R.R. Sur.	Rig.
CULBERSON COUNTY	
Deep Rock Oil Co.'s No. 2 Kloh-Rumsey, Sec. 21, Blk. 29, T.&P. Sur., T-1 (NE of No. 1)	Drlg. 1,265 ft.
Hickey & Stiver's No. 1 C. O. Finley	Fighting cave 820 ft.

(Continued on Page 140)

making a total movement of West Texas crude 235,000 bbls. against the daily average production of 346,000 bbls.

Estimated Daily Average Production West Texas Week ending March 17, 1928

	Bbls.
Crane County	71,491
Crockett County	2,632
Ector County	12
Fisher County	230
Glasscock County	S. D.
Howard County	4,050
Jones County	1,296
Loving County	105
Mitchell County	3,363
Pecos County	45,857
Runnells County	160
Reagan County	19,873
Scurry County	45
Upton County	14,257
Winkler County	182,681
Total this week	346,052
Total last week	335,450
Increase	10,602

WEST TEXAS COMPLETIONS

Week Ending March 17

Howard County

F. H. E. Oil Co.'s No. 2 Dora Roberts-B, Section 136, Block 29, made 30 bbls. at 1,855-65 feet. Same company's No. 2 Dora Roberts-D made 40 bbls. at 1,308-25 feet. Marland Oil Co.'s No. 1 Clay-E, NW NE SE Section 138, Block 29, was drilled to a total depth of 3,656 feet; pay was topped at 2,480-2,520 feet. The well was plugged back to 2,725 feet and produced 65 bbls. the first 24 hours and is now pumping 60 bbls. Same company's No. 1 A. Richardson, C NW Section 12, Block 32, T.&P. Survey, T-1-S, was dry and abandoned at 3,618 feet. Merrick & Lamb's No. 3 H. R Clay had a show of oil at 1,734-79 feet and found the gas sand at 1,570-80 feet and 1,650-60 feet and is now pumping 35 bbls. oil and 1,100,000 feet of gas. Owen & Sloan's No. 3 Dora Roberts, Section 136, Block 29, found the pay at 1,322-32 feet and pumped 40 bbls. the first 18 hours. Henry Zweifel (receiver for Vitek Oil Co.) No. 2 H. R. Clay topped the pay at 1,757 feet and bottomed at 1,808 feet and swabbed 30 bbls. the first 24 hours.

Jones County

Hutson & Weaver's No. 1-A Smith topped the pay at 2,498 feet and bottomed at 2,533 feet and the well is producing 45 bbls. of oil and 4 bbls. of water.

Pecos County

Day Brothers & McKnight's No. 1 Yates, NW cor. Section 58, Block 1, had 1,000,000 feet of gas at 1,255 feet and a show of oil at 1,330 feet and flowed sulphur water at 1,395 feet and was abandoned at 1,400 feet. Mid-Kansas & Transcontinental Oil Co.'s No. 10 Smith-Taylor topped the pay at 1,264 feet and bottomed at 1,465 feet and had an initial production of 470 bbls. per hour through a 4-inch line. Same company's No. 11 Smith-Taylor topped the pay at 1,285 feet and bottomed 1,499 feet and made 2,107 bbls. the first five hours through a 4-inch line. Same company's No. 12 Smith-Taylor topped the pay at 1,310 feet and bottomed at 1,484 feet and made 2,072 bbls. in four hours through a 4-inch line. Same company's No. 15 Yates-A topped the pay at 1,305 feet and bottomed at 1,410 feet and had an initial production of 924 bbls. per hour. Same company's No. 16 Yates-A topped the pay at 1,168 feet and bottomed at 1,235 feet with an initial production of 375 bbls. per hour. Same company's No. 1 Yates-F had an initial production of 327 bbls. per hour from pay topped at 1,152 feet and bottomed at 1,349 feet. Pandem Oil Corp. and Gibson completed two wells on their River Bed lease. Their No. 8 topped the pay at 1,060 feet and bottomed at 1,095 feet and had an initial production of 50 bbls., 40 per cent water. Their No. 12 topped the pay at 1,056 feet and bottomed at 1,100 feet and made 25 bbls. a day. Phillips Petroleum Co.'s No. 1 Mrs. M. A. Smith, Section 39, Block 194, made 176 bbls. in initial, 30 per cent water, from pay topped at 1,255 feet and bottomed at 1,380 feet.

Reagan County

Big Lake Oil Co.'s No. 68 University topped the pay at 3,104 feet and bottomed at 3,145 feet and pumped 185 bbls.

Taylor County

Brown Production Co.'s No. 1 Henslee, NE cor. Section 5, Block 4, S.P.R.R. Survey, was dry and abandoned at 3,005 feet. Owen & Sloan's No. 1 Lattimer, Section 14, Block 9, T.&P. Survey, was dry and abandoned at 3,001 feet.

Winkler County

Humble Oil & Refining Co.'s No. 6 Grisham-Hunter topped the pay at 2,808 feet and bottomed at 2,811 feet and made 250 bbls. per hour open flow, 7 per cent water and b.s. Roxana Petroleum Corp.'s No. 3 Grisham-Hunter-B found the pay at 2,971-96 feet and made 2,000 bbls. open flow. Southern Crude Oil Purchasing Co.'s No. 1 Hendricks, T-88-H, had a show of oil and gas at 2,790 feet, and a light spray of oil at 2,897 feet. Pay was topped at 3,017 feet and bottomed at 3,023 feet and the well made 113 bbls. per hour, 4 per cent b.s. and water.

WEST TEXAS

Daily Average Production by Leases Week Ending March 17

Crane County

Company and Lease—	Wells	Bbls.
Church et al:		
University	1	80
Church & Weekley:		
University	3	910
Church & Fields:		
Duoil-University	1	110
Eastland Oil & Collett:		
University	5	3,808
Gulf Prod. Co.:		
All leases	67	17,786
Humble O. & R. Co.:		
University	13	4,566
Independent O. & G. Co.:		
University-A	5	1,097
University-B	2	1,062
Landreth Prod. Corp.:		
Cowden-Anderson	16	7,319
Magnolia Pet. Co.:		
University-Hardwicke	14	2,594
University-O'Keefe	12	1,501
State-Lasseter	3	181
Magnolia et al:		
University	4	63
Pecos Oil Co.:		
University	16	3,790
Prairie O. & G. Co.:		
University	5	*395
State-Lasseter	7	*9,878
Simms and Atlantic:		
University-A	9	*1,948
University-B	1	48
University-C	8	*3,123
University-D	12	*3,939
University-E	1	141
Stidham & Thrasher:		
University	1	12
The Texas Co.:		
University	1	180
University-Beasley	1	30
Tidal Oil Co., et al:		
University-B	2	57
University-C	1	32
University-E	1	75
University-F	8	*1,734
University-G	3	*379
University-H	2	22
University-I	8	*3,812
Total Church & Fields—McElroy Pools	236	70,682
Average per well		299.5

Miscellaneous Crane County

Gulf Prod. Co.:		
Waddell	1	23
Independent O. & G. Co.:		
Hughes	1	5
McMan O. & G. Co.:		
Hughes	2	62
Marland Oil Co.:		
All leases	14	530
The Texas Co.:		
King	9	189
Union Land-F	1	0
Miscellaneous total	28	809
Grand total Crane County	264	71,491
Average per well		270.9

Pecos County

Pandem Oil Co. et al:		
Pecos River Bed	7	30
California Oil Co.:		
Yates, Lease-1	12	3,372
Smith, Lease-1	1	76
Smith, Lease-3	11	4,037
Gulf Prod. Co.:		
All leases	11	6,358
Humble O. & R. Co.:		
M. A. Smith	6	1,345
M. A. Smith-B	4	1,325
Kirby Pet. Co. and Edson:		
J. H. Tippett	1	186
Marland Oil Co.:		
Yates-A	10	957
Maxda and Savoy Oil Co.:		
M. A. Smith	1	240
McMan and Marland:		
Yates	15	3,805
McMan O. & G. Co.:		
J. H. Tippett	2	524
Mid-Kansas and Transcontinental:		
Yates-A	15	4,902
Yates-B	23	3,307
Yates-C	9	2,131
Yates-D	2	465
Yates-E	1	140
Yates-F	1	518
Smith	2	79
Smith-Taylor	11	4,629
Phillips Pet. Co.:		
Smith	1	93
Red Bank Oil Co.:		
Smith	2	480
Roxana Pet. Corp.:		
Tippett	7	2,835
Smith	5	1,164
Simms Oil Co.:		
Smith	6	2,889
Texon O. & L. Co.:		
Yates	2	0
Total Yates Field	167	45,857
Average per well		274.5

Winkler County

Atlantic O. P. Co.:		
Grisham-Hunter	4	7,056
Grisham-Hunter-E	1	3,175
Ida Hendricks	1	310
Ida Hendricks-D	2	*3,029
Atlantic and Collett:		
Ida Hendricks-F	1	5,865
Cranfill & Reynolds:		
Ida Hendricks	2	3,048
Grisham-Hunter-B	1	175
Hendricks-C	1	10,980
Gulf Prod. Co.:		
T. G. Hendricks	8	16,341
Humble O. & R. Co.:		
Grisham-Hunter	4	*20,634
Ida Hendricks-B	3	4,757
Independent O. & G. Co.:		
Grisham-Hunter	6	*4,340
Grisham-Hunter-B	2	*1,550
Henrdicks	1	32
Ida Hendricks-B	1	365
Landreth Prod. and Roxana:		
Grisham-Hunter	2	6,224
Ida Hendricks-A	3	7,018
Magnolia Pet. Co.:		
Ida Hendricks	6	3,487
Murchison & Cranfill Bros.:		
Grisham-Hunter	2	150
Grisham-Hunter-C	1	115
Grisham-Hunter-B	2	710
Republic Prod. Co.:		
Grisham-Hunter-A	1	8,525
Grisham-Hunter-B	1	45
Roxana Pet. Corp. et al:		
Scarborough	1	20
Roxana Pet. Corp.:		
Grisham-Hunter-A	2	*14,395
Grisham-Hunter-D	2	2,866
Ida Hendricks-B	3	*4,861
Ida Hendricks-C	5	*11,859
Southern Crude Co.:		
T-67 Hendricks-A	1	217
T-67 Hendricks-C	5	1,526
T-67 Ida Hendricks-B	1	540
T-67 Hendricks-F	3	3,744
T-68 Ida Hendricks-A	1	0
T-88 Ida Hendricks-A	1	765
T-88 Hendricks-B	2	6,482
T-88 Ida Hendricks-C	6	2,530
T-88 Ida Hendricks-H	1	2,185
T-88 Ida Hendricks-I	1	1,502
Texon O. & L. Co.:		
Grisham-Hunter-A	1	*2,150
Grisham-Hunter-B	2	8,020
Pure Oil Co.:		
Grisham-Hunter	3	5,105
Grisham-Hunter-B	2	1,455
Turman et al:		
Ida Hendricks	6	4,518
Total Winkler County	105	182,681
Average per well		1,739.8

*Pinched in.

EDITORIAL

A PERMANENT REMEDY

(Continued from Page 31)

developing customer interest leading to increased consumption of gasoline.

The Oil and Gas Journal has received sheaves of commendations of the idea of stimulating gasoline demand through such an advertising plan but mere commendation will not get anywhere. No matter how good an idea may be, its benefits cannot be secured without practical application.

Oil men have learned the advantages of co-operation in the curtailment program, in standardization, in uniform accounting, in research. It is only necessary to carry that co-operation further and apply it to developing increased use through effective advertising and the problem of overproduction will be dissolved in the sunshine of increased consumption.

The Western Refiners Association, the National Petroleum Association representing the eastern refiners, and the Natural Gasoline Association might well get together before the season of summer consumption begins and make a definite start to encourage a wider riding habit with profit to the industry and pleasure to its customers.

The whole country would benefit from the resulting stabilization of the oil industry, not through curtailing its operations but expanding them by stimulating larger use of its principal product. The steel industry and related industries which depend so largely on oil country operations, the automotive industry, the tire industry, the road building industries, cement and asphalt and all the connected businesses would share in the prosperity radiating from it.

In fact in its broader aspect the potentialities are so big that the stimulation of gasoline consumption by attractive and effective advertising might well engage the active interest of all these industries which would infallibly share the resulting returns.

Late News from the Field

CALIFORNIA

LOS ANGELES, Calif., Mar. 20.—Miley Oil Co.'s No. 3 in Rincon Field, discovered by the Pan American company several months ago, came in flowing 1,200 bbls. daily from a depth of 3,133 feet. The well is producing from 20 feet of sand under casing pressure of 300 pounds. This is the fourth well finished at Rincon since discovery; and while all showed favorable flush, they failed to hold up, due to limited amount of sand present and water trouble which is preventing clean production.

GULF COAST

HOUSTON, Tex., Mar. 20.—Pure Oil Co.'s No. 1 Lost River, the first test in the Lost Lake district of northern Chambers County, was bailed dry Sunday but since then started filling up with oil at the rate of 40 feet an hour. The casing being 8¼-inch the gas pressure is not sufficient to flow the oil. The casing is set at 3,590 feet and the total depth of the sand is at 3,604 feet.

Yount Lee Oil Co.'s No. 19 fee, Spindletop, has been completed flowing approximately 2,000 bbls. daily from sand around 4,650 feet.

OKLAHOMA

The Seminole area has remained below the 300,000-bbl. mark for three successive days. On Tuesday morning of this week the output by pools was:

Little River	40,747
Bowlegs	83,779
Earlsboro	96,069
Seminole	56,644
Searight	18,072
Total barrels from 1,079 wells	295,311

The Earlsboro Pool has declined below the 100,000-bbl. per day mark for the first time in many months.

To the east of the Maud area the Amerada Petroleum Corp.'s No. 1 Gravel, SW cor. NE Section 1-8-4, is drilling in the Sylvan shale at 4,215 feet. This well

(Continued on Page 142)

Gohlke Pool Completes New Wells

Archer County Area Feature of Wichita Falls District. Loving Pool in Young County Has Five. Panhandle Declines

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Mar. 19.—Panhandle and Wichita Falls districts divided the interest in northern Texas as the Ranger district passed a comparatively quiet week.

Most of the activity of general interest in Wichita Falls district was in the Gohlke Pool when 11 new wells added close to 1,300 bbls. of flush production to the pool. This pool is in the Geraldine Townsite of Archer County and was discovered a few weeks ago by F. H. Gohlke and associates.

Fain-McGaha and associates' No. 2 Wilson-C was the premier producer of the week when it was completed making 15 bbls. per hour from sand at 1,558-65 feet. The same operators brought in another good well in that pool which made 12 bbls. per hour.

The completion report from that district is one of the strongest in recent weeks in point of new production. Considerable drilling is still in progress in that pool and adjacent territory. It is expected the flush production from the Gohlke Pool will be reflected in the daily average production next week and keep the district on the slight upward climb it has had for the past two weeks.

Northwest of the producing area of the Gohlke Pool, Consolidated Oil Co.'s No. 1 L. F. Wilson, in Block 11, is testing out its sand at 1,581 feet. In the event this test makes a well it will give the pool a good extension to the northwest. About a mile south of production, Riner-Bailey's well is drilling at a depth close to the pay found in the Gohlke Pool. This well, barring accidents, will tell the story of the south extension within a day or so.

In Wilbarger County, Golding and Cochran's No. 1-B W. T. Waggoner, Section 24, Block 4, topped the sand at 2,378 feet and bottomed at 2,392 feet. When the well was put on the swab it made several good flows and during the first 15 hours put around 150 bbls. in the tank. It is one of the best wells brought in since the discovery of the south Vernon Pool.

Loving Pool

Like Archer County, Young County contributed to the report with a small flock of grass root wells, completed in the Loving Pool in the northeast part of the county. Five new wells in that pool had a combined initial production of 843 bbls. This production is high-gravity crude and coming from the pay found around 500 feet. The best well of the group was Pennell Oil Co.'s No. 2 Boone, which made 283 bbls. at 510-31 feet.

New locations are being made daily in this pool, which is one of the busiest areas in the Wichita district. Numerous wells are in some stages of drilling in the pool. Completion of Riggs and others' No. 1 McKinley in Section 1,489 for 125-bbl. well at 505-26 feet meant a slight extension to the northwest for Loving. In other parts of Young County new production was not as remarkable and decline of old wells offset the flush production of the Loving Pool.

In Cook County, developments were confined to the cleaning out of old wells and starting a few on inside locations, while the chief item of interest in that county was the sale of producing acreage. Lynch- Stahl & Burres of Ardmore, Okla., sold their lease in the Muenster Pool with 12 small pumpers on it to Arthur D. Robinson for a reported cash consideration of $80,000.

Panhandle Declines

Panhandle operations have shown a steady increase for several weeks, while production has been going down steadily. The past week showed a sharp drop in new locations, when only one was reported. Offsetting that, however, the Bowers Pool in Gray County was again in the limelight with a good well. Delaney and associates' No. 6 Jackson, SW cor. E half SW Section 88, Blk. B-2, had the pay in granite wash at 2,962-66 feet and averaged 2,000 bbls. daily for the first three days. This well is on the south edge of the Bowers Pool.

In the same pool, Phillips Petroleum Co. completed a 200-bbl. well and The Texas Company completed a gas well. Empire Gas & Fuel Co. brought in another good gas well on its gas reserves in the Panhandle and wound up the completion report of the field.

Of more importance, however, is the activity extending production west in the Wilcox-Pampa Pool 3 miles south of Pampa in northeastern Gray County. Gulf Production Co.'s No. 2-A Holmes, SE NE Section 107, Block 3, I.&G.N. Survey, was completed at a total depth of 3,126 feet, making 340 bbls. of 36.8 gravity oil. This well is approximately a half mile west of production. Offsetting this well diagonally to the southeast, Midwest company's No. 1 Holmes, NW cor. of the SW of Section 86, Block 3, came in a few days later swabbing 1,525 bbls. from broken formation at 3,110-3,332 feet. About a half mile northwest of these wells there is a 3,190-foot dry hole.

Only one completion was reported from Wheeler County and that was a gas well good for 30,000,000 feet daily. The completion report was rounded out when Westbrook Oil Co.'s Randall County test was dry and abandoned at 4,050 feet.

The Ranger district was kept under a shadow during the past week, not because of the lack of drilling but because none of the drilling wells had encountered any formation to create much excitment.

Two more producers were added to the Clark-Buffalo Pool in Brown County when Henshaw Oil Corp. completed two wells on its Bush lease, one good for 250 bbls. and the other good for 275 bbls. Both of these wells are on the west side of the pool, which has been defined in the other three directions.

Production of three districts showed a loss of 228 bbls. in daily average. Losses in the Panhandle and in the Ranger district offset the 651-bbl. increase recorded in the Wichita Falls district.

PANHANDLE COMPLETIONS
Week Ending March 17
Gray County

Delaney's No. 6 W. Jackson, SW cor. E half SW, Section 88, Block B-2, found the granite wash at 2,962-66 feet and flowed 6,000 bbls. the first three days. Empire Gas & Fuel Co.'s No. 1 C. B. Bell, C SE, Section 134, Block 3, I.&G. N. Survey, was drilled to a total depth of 2,755 feet and made 18,000,000 feet of gas at 2,608-85 feet. Phillips Petroleum Co.'s No. 3 W. Jackson was drilled to a total depth of 3,040 feet and flowed 200 bbls. daily from the granite wash at 2,920-30 feet. Phillips Petroleum Co.'s No. 1 H. M. Jones was drilled to the total depth of 3,305 feet but was plugged back to 3,180 feet and is pumping 10 bbls. from the old pay at 3,114-25 feet. The Texas Company's No. 2 J. B. Bowers was drilled to the total depth of 3,-206 feet and made 14,000,000 feet of gas from 2,415-2,810 feet. Bay Shore Co.'s No. 1 C. W. Bradford, Section 143, Block 2-B, made 80,000,000 feet of gas but the hole was junked at 2,975 feet and has been temporarily abandoned. Gulf Production Co.'s No. 2-A Holmes, SE cor. NE, Section 107, Block 3, I.& G.N. Survey, was completed at 3,126 feet making 340 bbls. daily.

Randall County

Westbrook Oil Co.'s No. 1 J. Beckman, SW cor. SE NE, Section 46, Block B-5, was dry and abandoned at 4,050 feet.

Wheeler County

Rook & Angus' No. 1 Smock, (Hinkey) C SE SE, Section 5, Block 24, H.&G.N. Survey, was drilled to a total depth of 2,047 feet and made 30,000,000 feet of gas at 1,990-94 feet.

Estimated Daily Average Production North Texas
Week ending March 17, 1928

Panhandle—	Bbls.
Carson County	7,080
Gray County	18,515
Hutchinson County	44,640
Moore County	10
Potter County	35
Wheeler County	1,050
Total this week	71,330
Total last week	71,710
Decrease	390
Wichita Falls district—	
Archer County	20,272
Baylor County	92
Clay County	479
Cooke County	3,458
Jack County	1,527
Montague County	9,231
Throckmorton County	994
Wichita County	26,537
Wilbarger County	10,611
Young County	8,836
Total this week	82,037
Total last week	81,386
Increase	651
Ranger district—	
Brown County	12,713
Callahan County	3,010
Coleman County	1,558
Comanche County	1,305
Palo Pinto County	467
Ranger	3,375
Shackelford County	5,410
Stephens County	8,540
Total this week	46,276
Total last week	46,765
Decrease	489
Grand total this week	199,633
Grand total last week	199,861
Decrease	228

WICHITA FALLS DISTRICT COMPLETIONS
Week Ending March 17
Archer County

Burns and Humble Oil & Refining Co.'s No. 2 Wilson found the pay at 1,-557-61 feet and made 61 bbls. R. P. Dorran's No. 1 Fennell made 12 bbls. at 680-90 feet. Fain-McGaha Oil Corp.'s No. 4 Wilson-A made 40 bbls. at 1,552-70 feet. Fain-McGaha and Humble company's No. 2 Wilson-C swabbed 15 bbls. per hour at 1,558-65 feet. Same companies' No. 1 Wilson-C found the pay at 1,552-62 feet and swabbed 60 bbls.

Fain-McGaha Oil Corp. and United Producers Co. completed three wells on their Wilson-B lease as follows: No. 1 made 60 bbls. at 1,554-68½ feet; No. 2 made 168 bbls. at 1,563-71 feet; No. 3 swabbed 12 bbls. per hour at 1,551-68½ feet.

Gardner, Wilson & McCaldin's (formerly Krueger and others') No. 2 Parrish made 100 bbls. at 1,558-64½ feet. F. H. Gohlke and others' No. 1 Jones & Warren made 40 bbls. at 1,565-59½ feet. Same company's No. 1 Parrish, recompleted, made 74 bbls. at 1,552-74 feet. Same company also completed No. 1 Taylor for 116 bbls. at 1,553-61 feet. D. O. Johnson and others' No. 2 Wilson-A made 8 bbls. after a 2 and 5-quart shot at 1,556-68½ feet. United Producers Co.'s No. 4 Perkins and others made 25 bbls. at 1,017-28 feet. Marland and Consolidated Oil Co.'s No. 6 Ward made 18 bbls. at 1,019-24½ feet. Panhandle Oil & Refining Co.'s No. 1 Garvey made 17 bbls. after a 20-quart shot at 749-71 feet.

H. M. Kelleher and others' No. 1 Netherton was dry and abandoned at 1,-527 feet. Pois & Johnson's No. 1 Jackson was dry and abandoned at 1,500 feet. Maer & Staniforth's No. 1 Thuman was dry and abandoned at 1,550 feet. Robertson & McMahon's No. 1 Meade was dry

(Continued on Page 138)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending March 17, 1928

Company, Well, Farm, Name, Section and Block—	Remarks—
ARMSTRONG COUNTY	
United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 162, Blk. 4, H.&G.N. Sur.	S.D., 3,780 ft. for fishing tools
BRISCOE COUNTY	
C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW, Sec. 22, Blk. B-3, B.S.&F. Sur.	S.D., 1,620 ft.
CARSON COUNTY	
Amarillo Oil Co.'s No. 1 E. S. Polling, C NE of N 80 acres of NE, Sec. 12, Blk. Y-2, B.&B.	Drlg., 400 ft.
Amatex Dev. Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y	T. A., 2,110 ft.
Empire G. & F. Co.'s No. 1-A Texas Co. fee, C NE, Sec. 60, Blk. 4, I.&G.N. Sur.	Set 8-in. csg., 2,100 ft; drlg., 2,-200 ft.
Empire G. & F. Co.'s No. 1 White Deer Inv. Co., C SE of Sec. 51, Blk. 4, I.&G.N.	Drlg., 2,490 ft; 1,000,000 ft. gas, 2,460 ft.
Empire G. & F. Co.'s No. 1 J. C. Noel, C SW, Sec. 41, Blk. 4, I.&G.N. Sur.	Rig on ground.
Empire G. & F. Co.'s No. 1 E. W. Sheridan, C NE, Sec. 243, Blk. B-2, H.&G.N. Sur.	Rig.
Gulf Production Co.'s No. 1 W. E. Cobb, SE cor. S half NE, Sec. 202, Blk. 3, I.&G.N. Sur.	Derrick.
Marston Oil Co.'s No. 1 J. L. Noel	Drlg., 3,000 ft.
Skelly Oil Co.'s No. 8 H. Schafer, NE SW SW, Sec. 88, Blk. 4, I.&G.N. Sur.	Set 10-in. csg., 1,077 ft.
The Texas Co.'s No. 1 W. H. Cobb, NE SE SE, Sec. 202, Blk. 3, I.&G.N. Sur. (Lease S 100 A SE)	Drlg., 2,170 ft.
CASTRO COUNTY	
Colorado O. & R. Co.'s No. 1 M. Slemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur.	S.D., 510 ft. for csg.
CHILDRESS COUNTY	
Hoover & Calloway's No. 1 O. L. Tucker, Sec. 736, Haggard Sur.	Spudded and S.D.
C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands	Set 6-in., 2,902 ft.; S. D. 3,745 ft.
COTTLE COUNTY	
Exploration Co.'s No. 1 Richards	Spudded and S.D.
DALLAM COUNTY	
Wood Bros. et al's No. 1 Capitol Synd., Sec. 19, Blk. 17	Hole full wtr., 4,007-4,127 ft.; S.D., 4,360 ft.
Marland Oil Co.'s No. 1 A. M. James, C SW W ½ Sec. 21, S. H. McElreath Sur.	S.D., 3,750 ft.
Marland Oil Co. et al's No. 1 Capitol Synd., Sec. 36, Blk. 18, Capitol Synd. land	S.D., 3,500 ft.
DONLEY COUNTY	
A. T. Drlg. Co.'s No. 1 F. E. Harrington, Sec. 39, Blk. 3-C	1,200 ft. wtr., 2,115-22 ft.; show gas, 2,140-60 ft.; dry G.W., 2,-200-93 ft; T.D., 3,498 ft; drlg. up U.R. lugs.
FLOYD COUNTY	
Explin. Co.'s No. 1 S. H. Boone, C. C. H. Johnson Sur.	Spudded and S.D.
Explin. Co.'s No. 1 Land & Cattle Co.	Drlg., 1,885 ft.
Hoffer Oil Corp.'s No. 1 Nelson	Spudded and S.D.

(Continued on Page 77)

From an article by C. O. Willson in
The Oil and Gas Journal, February 16, 1928

"As explained by one operator 'the low prices received for refined products has not relieved the refiners of the necessity of bettering their manufacturing operations but on the contrary has made it imperative that they secure the maximum yields of the highest priced products at the lowest possible operating costs.'"

The way and the best way to do this is to use the Dubbs Cracking Process with Flashing System

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

St. Louis-Pearson Switch Area Active

Recent Completions in That Section of Oklahoma Attract Attention as Seminole Continues Its Downward Trend

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

With the Greater Seminole fields having a struggle to remain above the 300,000-bbl. per day figure, and the St. Louis-Pearson Switch region of Pottawatomie County recording new performances which create additional interest, the location situation in the Oklahoma fields showed some slight change last week.

The crude market is still strong for the better gravities of oil, and there is considerable crude coming out of storage at this time in the Oklahoma-Kansas territory. This seasonal demand is far above the same period last year, and were it not for the additional output from the Greater Seminole area, drafts on crude stocks in the two states would be alarming. The two states have a combined daily production of 766,000 bbls. against an output of 555,000 bbls. one year ago. Since the current rate of production fails to meet the demands for high gravity oils, the situation which would have been presented had last year's rate of production been the present output is easily imaginable. The market for good crude has not only absorbed the difference which is 211,000 bbls. daily, but it requires crude out of the tanks. A healthy condition for the companies having this character of production to contemplate.

The Greater Seminole area presented little news of an interesting character, except the continuation of abandoning wells. There was on an average of one and one-half wells per day plugged and abandoned last week, and the field now has 1,080 producers. The daily average output from this area remained very close to 300,000 bbls. per day, stormy weather conditions registering slight losses on two days when the output was down to 297,698 bbls. It has been significant in the past that when any exceptional losses have been sustained through the workings of the elements, they have never been regained in their entirety, and the regular output has sagged. This will probably hold true of the slight losses of last week.

Expect Material Decrease

The decrease in drilling activity is another omen which might influence the thought that a severe slump in Seminole's output may be expected rather soon. There are only 57 active drilling operations in the five pools of the field, and as they are completed, there is nothing pending to stop the rate of decline. The Earlsboro Pool especially seems destined to experience a severe slump, and several good leases in this region have recently been slipping from their normal production. The majority of the wells plugged last week were in the Earlsboro Field.

The St. Louis-Pearson Switch area is making a strenuous attempt to crowd the Greater Seminole Field off the map. Recent completions in this region have emphasized the importance of other formations besides the Wilcox sand. This region first attracted attention two years ago when the presence of an underground Hunton arch was disclosed. Drilling at that time resulted in good production from this stratum, but some Hunton failures were deepened to lower levels which has resulted in the current output from the Sylvan shale, the Simpson sand, and possibly the Wilcox formations.

The Mid-Continent Petroleum Corp. and the McCulloch Oil Co.'s No. 1 Smith, NW cor. SE Section 25-7-4, was completed 10 days ago, and has been drilled deeper with an increase in production. This well is now making 1,900 bbls. daily from what is thought to be the Simpson sand. Last week the Gypsy Oil Co. and Westheimer & Daube's No 2 Leclaire, NE cor. SW NE Section 23-7-4, found the Simpson sand productive. It was tapped 4,306-09 feet, and the well has been holding steadily at 1,850 bbls. daily. To the north of this well, the Magnolia Petroleum Co. has an exceptionally good well in the Hunton lime. This is No. 2 Robbins, SE cor. SW SE Section 15-7-4, and it had Hunton from 3,725-3,826 feet, and is making 3,900 bbls. It started flowing at the rate of 180 bbls. hourly, and this places it as the best Hunton lime well found in the pool to date. The offset wells have not penetrated a similar thickness of Hunton, but following the Magnolia's performance, they will very likely be deepened.

These three wells, the Mid-Continent and McCulloch, the Gypsy and Westheimer & Daube and the Magnolia well form a straight line running northwest and southeast for almost 3 miles, and the region between them will be the scene of extensive drilling this spring. The output of these wells will be prorated under the provisions of the Seminole agreement, and it is reported that all lease owners have agreed to the major principles of this program. There are many details to complete regarding offset wells and short-term leases in the prospective area, but it is felt that these matters will be straightened out in a manner satisfactory to all concerned.

An unusually important well in this region is the America Petroleum Corp.'s No. 1 Gravel, SW cor. NE Section 1-8-4, which found Misener sand at 4,110 feet, Hunton lime 4,118 feet, and is reported drilling in this stratum at 4,190 feet. The well filled 2,000 feet with oil, and made one small flow.

Naval Reserve Well Agitated

In the land of the noble red man, the Osage fields have been normal. The two wells on the Naval Reserve were opened again this week. The Kay County Gas Co.'s No. 2, NE cor. SW Section 22-24-7, was opened wide and agitated, with the result that it made 1,005 bbls. in 24 hours. It is reported showing some water. No. 3, SW cor. SE SE Section 9-23-7, made 373 bbls. in 24 hours when it was opened, and it is making one-half bailer of water per hour from a total depth of 3,055 feet.

Another gas well in the Oklahoma Panhandle was the Texas County Gas Co.'s No. 1 Barber, C NE NE Section 17-3-15, Texas County, which first had a showing of gas at 2,606 feet. When drilled in, this well made 10,000,000 feet of gas from a total depth of 2,642 feet.

In the Pontotoc area, the Indian Territory Illuminating Oil Co.'s No. 1 Taylor, NW cor. SW SE Section 29-5-5, has settled down to 15 bbls. an hour from the Hunton lime found 2,295-2,300 feet. The Marland Oil Co.'s No. 1 Lawrence, SW cor. SE Section 10-4-4, has a hole full of sulphur water in the Wilcox sand 2,125-2,139 feet. The presence of sulphur water is assumed to be evidence against the possibility of any adjacent production from the Wilcox.

Two interesting drilling wells in the Oklahoma fields are the Carter Oil Co.'s No. 1 Phillips, NW cor. NE NW Section 18-6-8, which has been troubled with cavey formations for several months. This well had the Woodford formation 4,037 feet, and the Sylvan shale 4,040 feet, apparently missing the entire Hunton section. In the Logan County fields, Acton & Brown's No. 1 Hull, NE cor. SE Section 11-18-4w, is drilling in the Wilcox sand with some water at a depth of 6,502 feet.

Production of wells in the Lovell area of Logan County giving the daily average production for the week ending Friday, March 16, is:

	Bbls.
Roxana Petroleum Corp.:	
Freelove	2,583
McCulley	1,843
Ross	597
Williams	264
McDaniel	72
Total	5,359

Greater Seminole Production

The production of the Greater Seminole Field by companies and leases for Thursday, March 15, is given below:

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Nitey	2- 7-6	3	2,875
Amerada-Wilcox:			
Fore	35- 8-6	2	970
Barnsdall:			
Hotulke	22- 7-6	1	50
Blackwell:			
Nitey	35- 8-6	6	2,763
Carter:			
Fish	36- 8-6	6	1,700
Jackson	11- 7-6	1	675
Continental:			
Cosar	36- 8-6	3	1,845
Gypsy:			
Brown	33- 8-6	1	50
Campbell	36- 8-6	2	197
Mungee	1- 7-6	1	40
Pottie	35- 8-6	3	527
Independent:			
Harris	23- 7-6	1	2,837
Davis	2- 7-6	2	1,785
I. T. I. O.:			
Campbell	1- 7-6	1	113
Dungan	35- 8-6	3	2,523
M. A. House	1- 7-6	1	262
W. E. House	1- 7-6	1	22
W. E. House "B"	2- 7-6	3	1,630
Hull	26- 8-6	1	86
Jackson	1- 7-6	3	2,098
McCulla	1- 7-6	3	925
N'tey	2- 7-6	7	1,505
Phoebe "A"	36- 8-6	3	839
Phoebe "B"	36- 8-6	4	365
Reed	1- 7-6	1	58
Soketheche	1- 7-6	4	973
Magnolia:			
Cruse	2- 7-6	1	355
Dixon	31- 8-7	1	56
Pottie	35- 8-6	4	872
Mid-Continent:			
Smith	5- 7-7	1	35
Wadsworth	36- 8-6	7	1,044
Pine-Phillips:			
Pottie	35- 8-6	2	1,070
Prairie:			
Chilcoat	25- 8-6	1	845
Dungan	35- 8-6	2	0
House	2- 7-6	4	1,945
Roxana:			
Smith	1- 7-6	1	12
Shaffer:			
Narcome	36- 8-6	1	85
Sinclair:			
Cosar	35- 8-6	2	1,420
Snowden-McSweeney:			
Tiger	13- 7-6	1	3,320
Superior:			
Soketheche	1- 7-6	1	16
Texas:			
Coker	1- 7-6	3	605
Tidal:			
House	1- 7-6	3	1,070
Johnson	1- 7-6	1	70
Total		102	40,580

Maud Pool

Barnsdall:			
Fife	14- 8-5	1	350
I. T. I. O.:			
State	16- 8-5	1	0
Total		2	350

Bowlegs Pool

Amerada:			
Rascoe	15- 8-6	8	2,095
Atlantic:			
Baker	10- 8-6	4	500
Fleet	23- 8-6	4	455
Grayson	13- 8-6	4	860
A. Jones	16- 8-6	3	101
C. Jones	9- 8-6	2	224
Barnsdall:			
McNac	18- 8-6	1	28
Murrow	11- 8-6	4	635
Carter Oil:			
Bowlegs	15- 8-6	4	1,495
Burden	23- 8-6	3	280
Harjoche	14- 8-6	6	710
Hilly	23- 8-6	3	905
Jones	11- 8-6	4	1,545
McCelsey	21- 8-6	1	10
Melissa	8- 8-6	1	200
Walker	15- 8-6	4	730
Wise	23- 8-6	12	3,470
Empire:			
Lacy	14- 8-6	6	543
Wise	23- 8-6	2	512
Gypsy:			
Bowlegs	22- 8-6	1	17
Bradley	9- 8-6	1	0
Cumsey	10- 8-6	4	1,507
Doser	7- 8-6	1	100
Grayson	13- 8-6	4	760
Harjoche	10- 8-6	2	3,335
Jones	11- 8-6	1	230
Walker	15- 8-6	8	1,860
Wise	23- 8-6	3	275
I. T. I. O.:			
Barnett	24- 8-6	2	312
Barnett "B"	23- 8-6	1	200
Billington	22- 8-6	5	1,087
Bowlegs	22- 8-6	11	2,018
Davis	13- 8-6	4	1,313
Fay	13- 8-6	9	2,545
Goforth	15- 8-6	12	1,568
Livingston	15- 8-6	11	3,541
Lizzie	13- 8-6	2	549
Walker	15- 8-6	8	936
Wilmott	16- 8-6	4	764
Work	24- 8-6	1	135
Youngblood	24- 8-6	2	6
Magnolia:			
Davis	13- 8-6	3	593
M. Davis	13- 8-6	1	302
Hammond	10- 8-6	3	632
Rhodes	12- 8-6	3	4,572
Van Buskirk	9- 8-6	1	307
McCulloch:			
Bowlegs	22- 8-6	2	360
Mid-Continent:			
Baker	10- 8-6	4	1,551
Bowlegs	22- 8-6	1	60
Smith	12- 8-6	6	555
Minnehoma:			
Bowlegs	15- 8-6	4	330
Prairie:			
Gahagan	23- 8-6	4	425
Harber	10- 8-6	8	3,360
Jones	11- 8-6	4	325
Templeton	12- 8-6	6	3,045
Whitney	23- 8-6	4	420
Pure Oil:			
Reed	14- 8-6	15	2,651
Strother "D"	11 & 14- 8-6	4	520
Strother "E"	10- 8-6	4	1,459
Strother "F"	10- 8-6	4	1,458
Taylor	16- 8-6	5	831
Shaffer:			
Lacy	14- 8-6	3	215
Sinclair:			
Bowlegs	22- 8-6	1	75
Cumsey	10- 8-6	4	4,812
Ellen	11- 8-6	7	1,478
Harjo	14- 8-6	3	765
Jones	9- 8-6	6	4,374
Taylor	10- 8-6	4	2,040
W. Taylor	10- 8-6	1	1,479
Walker	22- 8-6	4	985
Texas:			
Reed	14- 8-6	11	2,815
Tidal:			
Grayson	13- 8-6	4	980
Harjoche	10- 8-6	6	1,788

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

GRANT COUNTY

O.stot Development Co.'s No. 1 Snyder, NE cor. NE Sec. 6-28-3w ..... Shut down 4,518 ft.
J. V. Bailey and others' No. 1 Maddox, C SE Sec. 13-27-5w ..... Shut down 4,342 ft.
Thraves and others' No. 1 C. D. Fuss, SW cor. NW NW Sec. 30-27-4w ..... Shut down 1,230 ft.
Burns & Beasley's No. 1 Bolsterton, SW cor. NW SW Sec. 24-27-3w ..... Rig.
Brasil & Moses' No. 1 Goutier, SW cor. NW Sec. 34-26-4w ..... Shut down for pipe 650 ft.
Lambert and others' No. 1 Tabor, SE cor. NE SE Sec. 23-26-3w ..... Spudded and shut down.
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w ..... Fishing 5,640 ft.

HARPER COUNTY

Kopisch Oil Co.'s No. 1 Johnson, NE cor. SE Sec. 24-27-21w ..... Rigged up and shut down.
Hoffer Oil's No. 1 Cooper, NW cor. SE SE Sec. 12-25-22w ..... Shut down 4,130 ft.

WOODS COUNTY

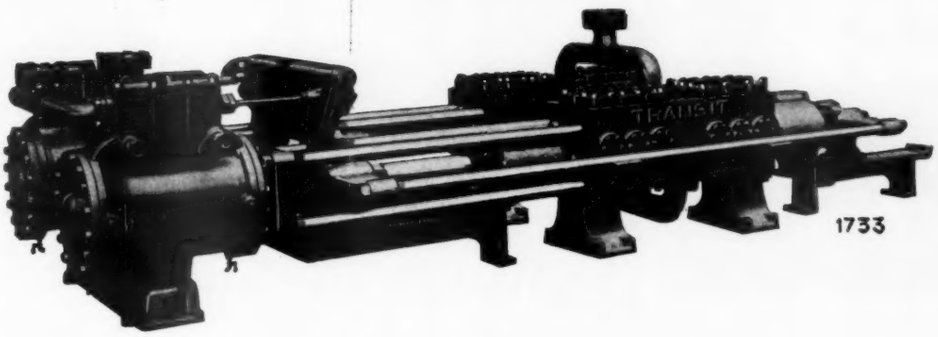
Sooner State Oil Co.'s No. 1 Marcum, C SW Sec. 20-27-15w ..... Spudded and shut down.
Victor Oil Co.'s No. 1 Buskirk, SW cor. SE Sec. 10-26-15w ..... Hole full water, 775-800 ft.; shut down 900 ft.
McCray Oil & Gas Co.'s No. 1 Whitney, NE cor. NW SE Sec. 19-24-14w ..... Shut down 1,880 ft.

KAY COUNTY

Boucher and others' No. 1 Cooper, SE cor. SE Sec. 23-27-2w ..... Drilling 1,525 ft.
Ponca Lee Oil's No. 1 McNeil, NW cor. NE Sec. 32-26-2e. Shut down 2,795 ft.

(Continued on Page 86)

The Wise Cracker



There are two very different meanings for the heading. Of course, we mean an intelligent cracking process operator.

The wise cracker realizes the importance of installing the best hot oil pumps his money can buy. If there is any place around a refinery where high quality is essential, it surely is where this dangerously hot oil is handled. There should be no compromise here.

TRANSIT hot oil pumps control the speed and pressure of the hot oil within very close limits. Speed and pressure thus controlled, in turn, exert a strong influence on maintaining constant temperature of the hot oil.

Thus by insuring unvarying speed; steady, even pressure, and constant temperature, TRANSIT pumps exercise the closest control over these characteristics of the hot oil. This tends towards a certain denite gasoline yield, both in quantity and quality. And they do all these things with absolute safety, both to your men, and your big refinery investment.

Pumps will gladly be sent on request.
Literature on TRANSIT Hot Oil

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Pump & Machine Co.
Oil City, Pa.

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Representatives

THE GLOBE SUPPLY & MACHINERY CO.
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Salt Lake City, Utah.

MORTON McI. DUKEHART & CO.
Baltimore, Md.

REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.

Twin States:				
Jones	11- 8-6	3	125	
Total		312	83,892	
Earlsboro Pool				
Amerada:				
Anderson	15- 9-5	2	1,360	
Cowden	4- 9-5	8	2,035	
Rogers	3- 9-5	2	965	
Atlantic & Sinclair:				
Foreman	18- 9-5	1	185	
Barnsdall:				
Brown	10- 9-5	4	1,594	
F. Bruner	2- 9-5	2	752	
N. Bruner	10- 9-5	4	1,545	
Cudjo	14- 9-5	1	26	
D. Davis	11- 9-5	3	974	
J. Davis	11- 9-5	4	781	
M. Davis	11- 9-5	3	135	
Gibson	9- 9-5	8	3,278	
Hern	15- 9-5	1	4	
Ingram	1- 9-5	7	3,882	
S. Pack	10- 9-5	4	255	
Peter	10- 9-5	4	332	
Sango	1- 9-5	3	6,691	
Sebolka	15- 9-5	1	676	
E. Sullivan	11- 9-5	1	11	
Sull-Harjo	10- 9-5	2	64	
Wasutke	12- 9-5	4	1,993	
Carter:				
Davis	13- 9-5	2	585	
Payne	12- 9-5	3	130	
Sango	1- 9-5	4	2,475	
Continental:				
Kaye	3- 9-5	2	285	
Spencer	12- 9-5	4	1,340	
Crosbie:				
Bryant	9- 9-5	2	0	
Empire & Routt:				
Barker	12- 9-5	1	1,250	
Edmondson	3- 9-5	3	1,202	
Gypsy:				
Bora	16- 9-5	1	0	
Bruner	10- 9-5	4	2,607	
B. Carter	11- 9-5	10	3,115	
Earl	16- 9-5	1	20	
Hunick	5- 9-5	1	2,172	
Noble	12- 9-5	4	3,380	
Peter	10- 9-5	3	222	
Sango	1- 9-5	5	5,322	
State	16- 9-5	4	947	
Independent:				
Bruner	10- 9-5	4	285	
Sullivan	10- 9-5	3	258	
Knapp	8- 9-5	4	2,172	
Independent-Margay:				
Gaines	11- 9-5	4	1,400	
Interocean:				
Payne	12- 9-5	1	0	
Magnolia:				
Bryant	9- 9-5	6	2,198	
Cowden	4- 9-5	4	80	
Dixon	12- 9-5	1	0	
Edmondson	3- 9-5	3	40	
Holmsley	11- 9-5	8	2,077	
Ingram	10- 9-5	1	30	
Lena	10- 9-5	3	80	
Seay	12- 9-5	9	3,797	
Simpson	10- 9-5	3	300	
Sparks	11- 9-5	7	1,629	
Sullivan	12- 9-5	3	170	
Mid-Continent:				
McCumber	9- 9-5	7	410	
Mid-Kansas:				
Anderson	14- 9-5	3	160	
Phillips:				
Dunaway	14- 9-5	1	58	
Gram	9- 9-5	4	180	
Prairie:				
Baker	24- 9-5	1	50	
Davis	13- 9-5	5	3,330	
C. Graham	3- 9-5	2	30	
O. Graham	10- 9-5	4	1,890	
Stidham	11- 9-5	13	4,155	
Roxana:				
Bayless	17- 9-5	1	15	
Spencer	12- 9-5	2	1,764	
Shaffer:				
Clark	1- 9-5	6	1,194	
Sinclair:				
Foreman	18- 9-5	1	15	
Hollins	12- 9-5	3	215	
Sango	2- 9-5	2	3,995	
Skelly:				
Spencer	12- 9-5	1	703	
Texas:				
Anderson	2- 9-5	6	586	
Brown	10- 9-5	8	3,060	
Rogers	5- 9-5	4	4,655	
Wilmott	10- 9-5	7	2,702	
Tidal:				
Watkins	9- 9-5	8	3,085	
Twin States:				
Barker	12- 9-5	4	105	
Hern	2- 9-5	4	2,235	
Total		284	100,688	
Seminole Pool				
Amerada:				
Fixico	23- 9-6	4	1,095	
Killingsworth	23- 9-6	4	659	
Rentie	23- 9-6	3	723	
Atlantic:				
N. Cudjo	35- 9-6	3	515	
Barnsdall:				
Carter	24- 9-6	8	1,661	
Henry	14- 9-6	2	244	
Jones	34- 9-6	4	1,135	
Carter Oil:				
B. Carter	24- 9-6	2	205	
F. Carter	23- 9-6	3	105	
J. Carter	24- 9-6	3	35	
Creamer	34- 9-6	2	30	
R. Cudjo	35- 9-6	4	220	
W. Cudjo	34- 9-6	2	30	
Gilliland	27- 9-6	1	295	
Grisso	23- 9-6	5	500	
M. Grisso	15- 9-6	1	265	
G. F. Killings	14- 9-6	4	495	
M. E. Killings	23- 9-6	12	6,180	
Knapp	13- 9-6	3	40	
Lukes	27- 9-6	6	1,400	
Pounder	34- 9-6	2	68	
Simpson	35- 9-6	3	62	

KANSAS WILDCATS

BARBER COUNTY

Barbara Oil Co.'s No. 1 Blunk, C NE NW Sec. 20-34-13w.. Drilling 2,460 ft.
G. W. Basom's No. 1 Grant, SW cor. SE SW, Sec. 13-31-3 ..... Drilling 789 ft.
Otstot et al's No. 1 Barlow, SE cor. SE Sec. 22-23-3w Shut down 1,860 ft.
Rolland and others' No. 1 Pickens, NE cor. NW NE Sec. 27-30-14w ..... Shut down 3,196 ft.
J. K. D. Shaffer's No. 1 Carter, C SE SE Sec. 2-33-12w.. Fishing 3,980 ft.
J. K. D. Shaffer's No. 1 Boggs, SW cor. NE SW Sec. 19-33-12w ..... Shut down 5,035 ft.
Skelly Oil Co. and others No. 1 Winter, CE half Sec. 17-31-13w ..... Drilling 3,510 ft.

BARTON COUNTY

Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w ..... Shut down 3,346 ft.
Huffline and others' No. 1 Smith, NE cor. SE NW Sec. 17-19-11w ..... Shut down 5,130 ft.
McJilton and others' No. 1 Evanston, SE cor. NW Sec. 34-17-11w ..... Rig.

BUTLER COUNTY

Cross & Frank's No. 1 Bryson, NE cor. NE Sec. 26-27-5.. Shut down 1,700 ft.
Empire Gas & Fuel Co.'s No. 1 Semisch, NW cor. SE NW Sec. 4-33-7 ..... Dry and abandoned 2,732 ft.
La Robb and others' No. 1 Bronsenger, NE cor. SW Sec. 24-27-3 ..... Rig.
Joe Ligge t's No. 1 Travender, NW cor. SE Sec. 24-23-6 Drilling 2,530 ft.
White Eagle Oil & Refining Co.'s No. 1 Dixon, NE cor. SE SW Sec. 1-27-6 ..... Hole full of water 3,089-3,105 ft.; shut down.
H. F. Wilcox Oil & Gas Co.'s No. 1 Littell, NE cor. SE NW Sec. 21-29-4 ..... Collapsed casing 1,453 ft.; shut down.

CHASE COUNTY

Griener & Fowler's No. 1 Carson, NE cor. NE Sec. 9-21-7 ..... Shut down 2,025 ft.

CLARK COUNTY

Skelly Oil Co. & Merriam's No. 1 Winter, C E half Sec. 17-31-12w ..... Drilling 3,512 ft.
Walter & Warner's No. 1 Mitchell, SW cor. NE Sec. 16-31-23w ..... Shut down 600 ft.

CLOUD COUNTY

Concordia Producing & Refining Co.'s No. 1 Murdock, SE cor. SE Sec. 6-6-4w ..... Fishing 3,590 ft.

COWLEY COUNTY

Allison & Fitzwilliams' No. 1 Shapland, NE cor. NW SE Sec. 20-30-6 ..... Shut down 790 ft.
Barnsdall Oil Co.'s No. 1 Russell, NE cor. NW SE Sec. 15-33-4 ..... Drilling 750 ft.
Derby Oil Co.'s No. 1 Seaman, NE cor. SE NE Sec. 32-30-3 ..... Drilling 2,802 ft.
John Herron and others' No. 1 Marshall, SW cor. NE Sec. 36-30-6 ..... Shut down 1,645 ft.
Meridian Gas Co.'s No. 1 Roselle, SW cor. SE Sec. 8-35-1.. Drilling 2,010 ft.
Otstot et al's No. 1 Volker, NW cor. NE Sec. 9-35-1.... Rig.
Harris & Hahn's No. 1 Gamble, C NW NW Sec. 17-35-2 ..... Shut down 1,400 ft.
E. B. Shawver and others' No. 1 Disser, NW cor. NW Sec. 10-34-3 ..... Drilling 1,665 ft.
E. B. Shawver's No. 1 Mullett, C NW SE Sec. 31-34-3.... Drilling 895 ft.
Vickers Petroleum Co.'s No. 1 Daniels, NE cor. NW Sec. 3-30-3 ..... Shut down 1,300 ft.
E. B. Shawver's No. 1 Mullett, C NW SE Sec. 31-34-3; gas rights only ..... Spudded and shut down.

DICKINSON COUNTY

McBride & Goens No. 1 Shirley, NE cor. SW Sec. 21-12-4 ..... Dry and abandoned 2,469 ft.

ELLIS COUNTY

Derby Oil Co.'s No. 1 Weigel, C NW Sec. 25-2-17w..... Drilling 400 ft.
J. H. Tatlock et al's No. 1 Leiker, NW cor. NE NE Sec. 26-13-16w ..... Drilling 3,345 ft.
R. H. Hood and others' No. 1 Butler, C SE SE Sec. 18-26-11 ..... Machine.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, SE cor. NE SW Sec. 27-8-25w ..... Shut down 3,460 ft.

GREENWOOD COUNTY

Carnes & Bly's No. 1 Smith, NE cor. SE Sec. 4-24-18.... Drilling 1,600 ft.

(Continued on Page 90)

OFFSET TO DRY HOLE AT LOST SPRINGS IS PRODUCING WELL

By J. L. Dwyer
Staff Correspondent, Kansas Fields.

Another well in the Lost Springs Field offsetting a dry hole gave further evidence of the erratic nature of the Mississippi chat in that region. The Phillips Petroleum Co.'s No. 1 Frank, NW cor. SE SE Section 15-17-4, had the chat 2,386-2,464 feet, and is good for 25 bbls. daily. This well is an offset to the dry hole drilled by Harwood & Winters. There have been three dry holes drilled in this area offsetting good producing wells, one of which made 800 bbls. originally.

The Lost Springs area made a daily average production of 1,995 bbls. from 22 wells last week. The Phillips Petroleum Co.'s No. 3 Rezineck, NW cor. SW SW Section 22-17-4, is a light well in the chat, 2,387-2,443 feet. This is an offset to Independent Oil & Gas Co.'s No. 1 Bevans.

The list of producing wells at Lost Springs, giving their daily average output for the week ending Saturday, March 17, is:

	Bbls.
Phillips Petroleum Co.:	
No. 1 Wells Rezineck	43
No. 1 T. Rezineck	188
No. 1 Peterson	141
No. 1 McCoy	131
No. 2 McCoy	87
No. 1 Mowrer	31
No. 1 Frank	23
No. 3 Rezineck	35
No. 3 Peterson	40
Prairie Oil & Gas Co.:	
No. 1 Mowrer	168
No. 1 Rezineck	123
Lariaux and others:	
No. 1 Bevans	94
No. 1 Shoup	62
No. 1 Peterson	81
No. 1 Merrillat	183
No. 1 Fowler	110
Ward and others:	
No. 1 Layton	78
Reynolds and others:	
No. 1 Nitrourer	100
Independent Oil & Gas Co.:	
No. 1 Bevans	80
Sinclair Oil & Gas Co.:	
No. 1 Bevans	140
Braden and others:	
No. 1 Smith	43
Harwood & Winters:	
No. 1 Ucker	10
Total (from 22 wells)	1,995

McPherson County

In McPherson County, The Texas Company's No. 2 Chinberg, NW cor. NE NW Section 32-18-2w, has 800 feet of oil in the hole from sand 2,350-60 feet, and is estimated at 40 bbls. daily from this depth. The same company's No. 1 Chinberg was a similar size well at this depth. The McPherson Oil & Gas Co.'s No. 1 Anderson, C SE NE Section 31-18-2w, was estimated at 25 bbls. at this depth before finding the deeper gas production.

In Russell County, the Keys Petroleum Co.'s No. 1 Rathburn, NE cor. SW Section 14-9-16w, has cemented a cave at 3,030 feet, and should touch the regular Oswald lime within the next 175 feet.

Russell and Ellis Counties seem to be

(Continued on Page 119)

Strothers	34- 9-6	4	390
Vierson	23- 9-6	3	400
Empire:			
Gross	25- 9-6	2	92
Wilson	34- 9-6	2	296
Gypsy:			
Butler	35- 9-6	4	920
Carter	24- 9-6	8	305
Cudjo	34- 9-6	5	480
Fixico	26- 9-6	7	150
Harjo	25- 9-6	3	1,027
Wolfe	26- 9-6	6	222
Independent:			
P. Fixico	23- 9-6	3	200
Harjo	25- 9-6	3	150
Butler	35- 9-6	3	675
Independent & Garland:			
T. Fixico	25- 9-6	8	744
Independent & Interocean:			
Jones	35- 9-6	4	468
Indian Territory:			
Allen	24- 9-6	2	420
Bowlegs	26- 9-6	12	2,835
Gooden	25- 9-6	4	393
Harjo	24- 9-6	3	84
James	13- 9-6	2	252
Reed	13- 9-6	2	30
Kingwood:			
Johnson	23- 9-6	3	1,259
Magnolia:			
Born	25- 9-6	1	38
Franks	25- 9-6	4	824
Mid-Continent:			
Rentie	24- 9-6	9	1,140
Tayeche	24- 9-6	7	292
Mid-Kansas:			
Wilkins	25- 9-6	1	5
Phillips:			
Strothers	27- 9-6	2	145
Prairie:			
Gross	27- 9-6	5	105
Mason	27- 9-6	1	85
Spencer	26- 9-6	1	13
Strother	26- 9-6	8	1,815
Pure:			
Strother A	26- 9-6	17	5,875
Strother B	26- 9-6	5	1,923
Strother C	35- 9-6	1	403
Roxana:			
Harber	27- 9-6	2	259
Lashley	36- 9-6	2	28
Sinclair:			
Carter	13- 9-6	2	705
Cudjo, A.	35- 9-6	6	1,050
Cudjo, B.	35- 9-6	4	1,280
Dicey	35- 9-6	2	920
Fixico	27- 9-6	4	730
Slick:			
Cudjo	35- 9-6	3	1,653
Franks	35- 9-6	3	1,982
Giblet, Sam	36- 9-6	3	71
Tiger	35- 9-6	1	704
Superior:			
Cudjo	35- 9-6	4	305
Texas:			
Mayhue	36- 9-6	1	125
Tidal:			
Carter	24- 9-6	4	763
Fixico	26- 9-6	6	891
Harjo	25- 9-6	3	725
T. Harjo	23- 9-6	7	218
Mahardy	24- 9-6	2	70
Turman:			
Cudjo	35- 9-6	4	1,007
Grisso	35- 9-6	1	325
Jones	34- 9-6	4	1,517
Total		310	55,735
Searight Pool			
Amerada:			
Johnson	4- 9-6	1	70
Strothers	3- 9-6	3	1,207
Carter:			
Davis	4- 9-6	7	765
Frazier	3- 9-6	6	2,885
Johnson	3- 9-6	1	2
Kiker	2- 9-6	1	28
Mandler	3- 9-6	2	25
Scott	26-10-6	1	50
Gypsy:			
Cudjo	4- 9-6	3	832
Mid-Continent:			
Grayson	34-10-6	6	70
Davis	33-10-6	4	1,010
Pine:			
Lula	4- 9-6	1	30
Prairie:			
Cannon	33-10-6	1	6
J. Carter	10- 9-6	1	15
Houch	33-10-6	1	4
Kincaid	33-10-6	5	80
Varnum	5- 9-6	1	6
Wimer	22-10-6	1	20
Pure:			
Aldridge	3- 9-6	6	2,429
Roxana:			
Strothers	3- 9-6	4	2,559
Sinclair:			
Polly	3- 9-6	4	1,886
Superior:			
Varnum	4- 9-6	1	63
Texas:			
Fleet	4- 9-6	1	42
Twin States:			
Varnum	4- 9-6	2	390
Wilcox:			
Chupco	4- 9-6	8	2,711
Total		71	18,042

Totals

Field—	Wells	Prod.
Little River	193	40,580
Maud	2	350
Bowlegs	312	83,892
Earlsboro	284	100,688
Seminole	310	55,735
Searight	71	18,042
Total	1,082	299,287

Creek County

Burlingame & Sharp's No. 15 Miller, CNL S half SW NW, Section 13-19-8, is drilling at 1,000 feet. National Refining Co. has a machine at the location for No. 2 Futreel, SE cor. NE SE, Section 1-19-9. Kennedy & Horner and others' No. 1 Tiger, NE cor. NW NW, Section 25-18-11, is an old well drilling deeper at 2,175 feet. Dixie Drilling Co.'s No. 1-A Pahcakney, NE cor. SE NW, Section 28-18-11, is spudding. Henry & Avers moved a machine out for No. 3 Harris, CSL SE SE, Section 12-17-10. Thompson & Black have a machine at the location for No. 4 Broadnax, NW cor. SE SE NW, Section 16-17-11. J. A. Swindler and others' rig is on the ground for No. 1 Micco, SE cor. SW SW, Section 7-14-10.

Young & Whittington's No. 1-A Coconanney, NW cor. SE SE, Section 23-17-10, is making 10 bbls. from Dutcher sand at 2,481-2,509 feet. Thompson & Black's No. 3 Broadnax, NW cor. SE NW, Section 16-17-11, has been completed for 2,000,000 feet of gas in Bartlesville sand at 1,762-93 feet.

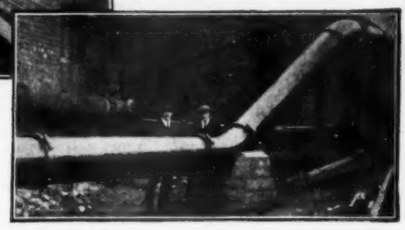
Grady County

Oklahoma Gas Utilities Corp. has the rig up for No. 4 Serrata, NW cor. SW NW, Section 25-5-8w. Location has been

(Continued on Page 120)

12" oil line.

Emergency 10" rising main installed in mine shaft.



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Richland Parish Gas Area Extended

Big Gasser Completed East and South of Proven District. Storm Wrecks Derricks in Louisiana and Arkansas

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas.

SHREVEPORT, La., Mar. 19.—Noe & Meredith's No. 1 Boughton in the SE NW Section 4-15-6, coming in Friday with 38,168,000 feet of gas at 1,020 pounds rock pressure, total depth 2,446 feet, lived up to the indications it gave a week ago when it blew out with 3,500,000 feet of gas at 2,369 feet and extended the proven area of the south end of the Richland Parish gas district approximately 2 miles east and 1½ miles south. It is not, however, the farthest east well in the field as a whole, there being a well 3 miles north that is still farther east and in the northern part of the field there are others. Possibilities for a similar extension south and west by Moody & Seagraves' No. 1 McDonald in Section 9-15-5, 6 miles west, do not appear so good. This semiwildcat missed the gas in the 2,400-foot sand and was dry again at 2,504 feet but is still drilling. Gulf Refining Co.'s No 1 Ches Wymond in Section 20-18-6, on the northern fringe of the field is fishing at 2,506 feet without having encountered any showing so far. Between Moody & Seagraves' McDonald well and production, Oliver & Masters' test of No. 2 Hatch in Section 2-15-15 is delayed indefinitely by a fishing job. They drilled 8-inch plug at 2,291 feet and dropped the whole drill stem in the hole. Gulf Refining Co. apparently is not particularly discouraged by failure to develop anything thus far in the Ches Wymond test, as it is reported negotiating with the company for 5,000 additional acres.

Two of the 16 completions in this division during the week were small producers, one in Nevada County, Arkansas, that has been waiting for standard rig for several weeks and the other in the El Dorado discovery pool. Ten were gassers with an initial 180,000,000 feet open flow and the rest were failures.

Woodley & Collins completed No. 1 Bain, Section 31-23-11, Bossier Parish, with an initial flow of 40,000,000 feet of gas at 3,070 feet as a slight southeast extension of Cartersville and their No. 1 Bollinger in Section 36-23-12 was a 26,500,000-foot gasser at 3,071 feet.

Use Dry Well for Repressuring

Standard Oil Co.'s No. 1-B, A. L. Barry, Section 11-20-16, Caddo Parish, Oil City district, was a salt water test at 1,826 feet. The Texas Company's No 5 Grand Bayou Planting Co., Section 25-13-12, DeSoto Parish, was dry as a second completion at 2,460 feet, but is not listed as a total loss as it will be used in repressuring the lease.

Monroe district contributed a new gas well in United Carbon Co.'s No. 2 Nelson fee, Section 6-19-5, Ouachita Parish, with 34,550,000 feet flow, total depth 2,180 feet, and the proven area of Richland Parish added 39,000,000 feet initial flow in a completion by the Southern Carbon Co. of No. 1 Spann, Section 8-16-6, total depth 2,449 feet. The Shongaloo district of Webster Parish listed a completion by Magnolia Petroleum Co. of No. 1 R. J. Munn, Section 29-23-9, with 12,000,000 feet initial, total depth 2,670 feet.

Five wells were completed in Harrison and Panola Counties, Texas. Doney and others' No. 2 Furrh in the Joel Lipscomb Survey made 2,000,000 feet at 973 feet and State Line Oil & Gas Co.'s No. 6 Waterman, E Pollock Survey, with 1,000,000 feet at a total depth of 2,390 feet, were Waskom's contributions. One of the Panola County wells was a failure, Hines and others abandoning No. 1 P. W. Baker in the George Goodwin Survey at 3,219 feet. S. H. Gardner and others got 4,000,000 feet of gas at 2,329 feet in No. 1 Cavin, B. C. Jordan Survey, and Magnolia Petroleum Co.'s No. 14 Carrie Steel gauged 1,911,896 feet of gas at 2,343 feet.

In Nevada County, Arkansas, Ames & Zingg put No. 1-B Womack, Section 10-14-21, which has been shut down at 1,215 feet waiting for standard rig since last November, on the beam pumping 15 bbls. from 3 feet of sand. Autrey Oil Co.'s No. 1 Groves in Section 31-13-20, about three-quarters of a mile north of production, was abandoned as a dry hole at 1,285 feet. C. H. Allison's No. 10 Fitzgerald, Section 17-18-15, El Dorado discovery field, made only 30 bbls. when put on the pump at 2,175 feet and 75 per cent of that was salt water.

Derricks Destroyed

Between 30 and 40 derricks on producing wells in north Louisiana and Arkansas fields were destroyed by a severe wind storm of short duration that swept the oil belt from west to east between 9 and 10 o'clock Friday morning. The storm came in across Caddo Lake, leveling seven derricks for the Gulf Refining Co. on the Ferry Lake lease, two or three more in the vicinity of Oil City and several others in the Pine Island district. The Haynesville and south Arkansas fields also felt the force of the blow but the greatest damage appears to have been done in the Urania Field where, it was reported, a dozen or more derricks were blown over. In the Richland Field, only one derrick was toppled. In falling it knocked the christmas tree off a 38,000,000-foot gas well which ran wild for a while but was under control again by night. The damage is estimated at around $100,000 in addition to loss of production.

Daily average runs from the field fell off as usual, though the decline was a little less. Shipments from the division as a whole totaled 130,660 bbls., a decrease of 555 bbls. from the previous week's average.

Runs from the several pools were:

Louisiana	
Caddo light	11,380
Caddo heavy	3,855
Homer	4,415
Haynesville	6,280
DeSoto-Red River	4,075
Elm Grove	550
Bellevue	1,100
Cotton Valley	4,520
Urania	7,870
Pleasant Hill	720
Total	44,765
Arkansas	
El Dorado	5,470
Smackover light	8,415
Smackover heavy	65,770
Stephens	1,100
Nevada County	1,680
Lisbon	2,400
Champagnolle	960
Bradley	100
Total	85,895
Both States	130,660
To.al last week	131,215
Decrease	555

NORTH LOUISIANA

Bossier Parish

Cartersville—Arkansas Natural Gas Co. is rigging up for No. 1 Crawford, a semiwildcat in Section 6-22-11, just southeast of production. Atlantic Oil Producing Co. passed up 1,500,000 feet of gas at 3,077 feet in No. 1 Bain, Section 31-23-11, and is drilling deeper. J. R. Bahan has derrick up for No. 1 Kilgore, 1,310 feet east and 675 south NW cor. Section 31-23-11. Louisiana Oil Refining Corp. drilled out cement after plugging back from 3,091 feet to 3,050 feet and now has a fishing job for a swab lost at 3,085 feet. Magnolia Petroleum Co. cemented 8-inch casing at 3,077 feet on No. 1 Cason, Section 1-22-12, and has set 430 feet of 13⅜-inch surface casing on No. 1 Matlock, Section 25-23-12. Natural Gas Products Co. has 6-inch cemented at 3,062 feet on No. 1 Floyd, Section 25-23-12. Northwest Louisiana Gas Co. is rigging up to drill No. 1 Barrett, Section 25-23-12, and Palmer Corp. is building standard rig to pump 8 feet of sand in No. 1 Roberson, Section 25-23-12, which started flowing two weeks ago at the rate of 6,000 bbls. of pipeline oil but later sanded up two or three times and now has screen set. The Texas Company has made location 425 feet north and 965 east of the center of Section 31-23-11 for No. 2 Henry Ross and has derrick up.

Elm Grove and Sligo—H. S. Goodwin's No. 1 Mercer, Section 21-16-12, is shut down at 1,950 feet. J. S. McCullough is building standard rig to pump No. 6 Hodges, Section 25-16-12, total depth 1,548 feet. Palmer Corp.'s No. 9-B Hodges, Section 25-16-12, is drilling sandy shale at 1,585 feet. R. O. Roy's No. 7 Caplis, Section 25-16-12, is standing with 300 feet of oil in the hole from 7 feet of sand, total depth 1,538 feet and is waiting on standard rig to pump.

Caddo Parish

Greenwood—Belchic & Laskey's No. 4 R. T. Sharp, Section 10-18-16, is coring at 1,647 feet. Magnolia Petroleum Co. is drilling No. 2 Bell, Section 4-17-16, at 2,050 feet and is rigging up to drill No. 2 J. W. Furrh, Section 28-18-16.

Pine Island—Dixie Oil Co. is in red shale at 4,125 feet with No. 81 Dillon, an old gas well, in Section 13-21-15, being deepened from the 3,700-foot strata; No. 90 in Section 14-21-15 is arranging to test at 4,056 feet, No. 91 in the same section is drilling at 2,188 feet and No. 92 Dillon in Section 13-21-15 is coring red shale at 4,119 feet; No. 4 H. H. Huckaby, Section 11-21-15, is in sandy lime at 4,019 feet. Magnolia Petroleum Co. has cemented 5¾-inch casing at 4,000 feet on No. 8-A Hampton, Section 15-21-15, total depth 4,010 feet; No. 22 Robertshaw, Section 23-21-15, bailed dry at 3,898 feet and will go deeper. D. C. Richardson Estate No. 6 Youree-Randolph, Section 13-20-15, was dry at 2,284 feet, tested salt water and is shut down waiting orders at 2,305 feet. The Texas Company's No. 9 A. Herndon, Section 14-21-15, pulled 4½-inch casing and is waiting orders, total depth 3,909 feet; No. 13-B Noel in the same section also is shut down, total depth 3,979 feet.

Monroe District

Ouachita Parish—Amalgamated Oil Co. is drilling gumbo at 2,050 feet on No. 1 Cole, Section 7-19-4. Hatcher & Evans have set 190 feet of 12-inch surface casing in No. 1 Fee, Section 21-19-4. Imperial Oil & Gas Products Co. No. 5 Stubbs, Section 13-19-3, is drilling 6-inch plug at 2,114 feet. Jordan Drilling Co. has begun drilling No. 1 Pereboom, Section 32-19-4. Ouachita Natural Gas Co. No. 9 Smith, Section 29-20-4, is drilling at 1,715 feet. Palmer Corp. set 145 feet of 12-inch surface casing in No. 3 Kate Cole, Section 38-20-4, and 8-inch at 821 feet; No. 4 on the same lease is a derrick 1,980 feet north and 660 west SE cor. Section 26-20-4. Pioneer Oil & Gas Co. is rigging up to drill No. 1 Filhoil, Section 11-18-4.

(Continued on Page 115)

MERGERS AND LARGER NATURAL GAS REQUIREMENTS BRING MORE ACTIVITY

By D. H. Bancroft

SHREVEPORT, La., Mar. 19.—Merger of the Doherty, Benedum & Trees and Insul gas properties in north Louisiana and Arkansas and activities leading to considerable pipe line construction which will draw in part on northwest Arkansas proven, semiproven and wildcat gas territory is reflected in increasing leasing activity in that part of the territory as shown by a recent survey which reveals a total of approximately 225,000 acres in 23 blocks built and building in Van Buren, Conway, Pope, Johnson, Franklin and Logan Counties. Most of this, being the rankest sort of wildcat acreage is being obtained on long-time leases for a small bonus and still smaller annual rental.

Much along the same line is the activity going on in north Louisiana with the difference that it is a case of the small operator, pinched by the prevailing low price of crude and flood of production from Oklahoma and West Texas, getting out from under whenever he can swing a trade that will allow him to at least break even. This is not always the case, however, as during the past six weeks a change has come over the situation here and wildcatting is on the increase and a structure at all promising will attract buyers of protection. And in the northeast part of Louisiana, Richland Parish gas developments and geophysical surveys have encouraged blocking by major interests.

The Texas Company Active

The Palmer Corp. has large holdings in northeast Louisiana and plans a test before June in Section 7-10-11, East Carroll Parish, to test particularly the Cane River formation from which, according to some authorities, Urania is producing. The Texas Company has been, perhaps, the most active of the majors in looking after protections around drilling wildcats and in acquiring acreage in semiproven areas. During the week it took over a block of 2,000 acres and the well on the Hamlin estate land in Section 28-10-13, Sabine Parish, begun some time ago by S. P. Borden and associates which has 12½-inch casing set at 145 feet. The company will resume operations on this wildcat, north of Pleasant Hill production, planning a deep test to 4,000-4,300 feet. It has also gone in fairly liberally for protection around Bruton and others' No. 1 Red River Farms in Section 2-17-26, Miller County. It recently got a big block in Catahoula Parish and has derrick up in Section 4-10-6 for the first test, and more recently acquired a block of 8,000 acres in East Carroll Parish centering in Township 20, Range 12, with a 90-day drilling obligation.

In northwest Arkansas, Empire Gas & Fuel Co. is negotiating for additional holdings to its blocks in Johnson County and Arkansas Natural Gas Co. has quite a bit of acreage. Several independents are in the field blocking stuff for turning to the major interests who will have to have more gas when present pipe line projects go over, and some of the majors themselves are busy assembling new blocks. The Empire has two wells capped in Johnson County, which had approximately 30,000,000 feet open flow capacity, and is drilling a third in Franklin County. It has a salt water test in a fourth.

DeSoto Parish, Louisiana, and Union County, Arkansas, wildcats furnished the big thrill in a drilling way. The former

(Continued on Page 114)

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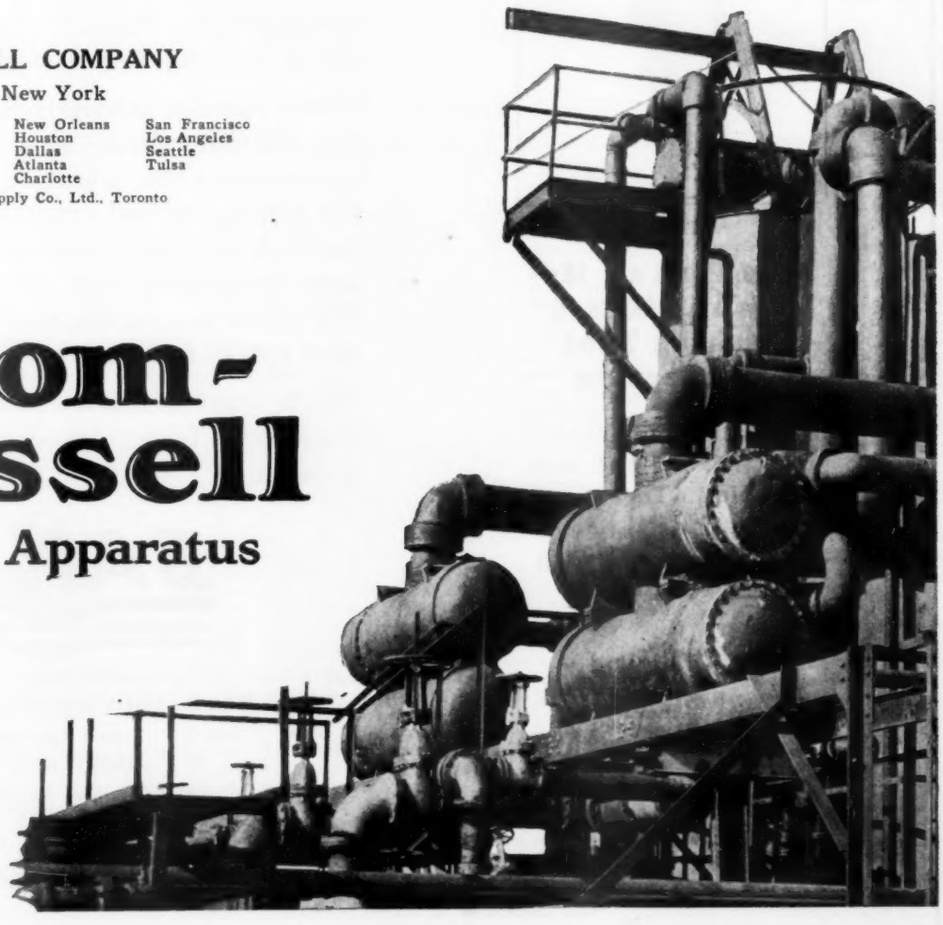

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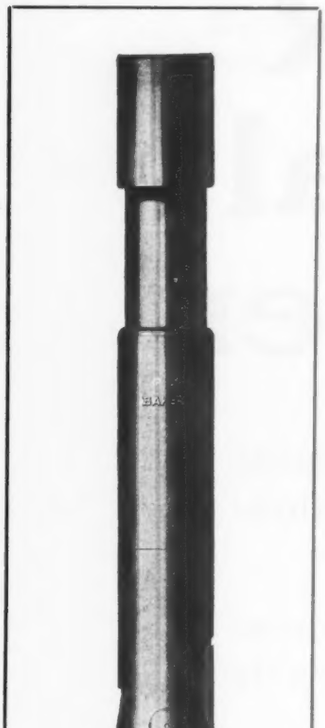

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San Patricio Gas Field Revived

Former Gusher in Kingsville Field Again Flowing a Little Oil. Cole Field Well Nearing Completion

By B. D. Stevenson
Staff Correspondent, Southwest Texas

SAN ANTONIO, Tex., Mar. 19.—Ed Leach has seeming'y brought back the Mathis Gas Field in the western extremity of San Patricio County. This field was discovered by the Texas Pac'fic Coal & Oil and the Plateau Oil companies, and a couple of wells put 6,000,000 feet of gas each daily into Southern Gas Co. pipe line, but trouble deve'oped and the field has been off production most of the time for two years. A half dozen wells were drilled and once before Leach completed a well at around 2,300 feet that looked like the field was brought back, but it went to water. No. 2 Collins, the last completion, looks better.

In the Kingsville Field, No. 2 Flato, which stopped flowing after making a gusher for a month and a half, has come back and is flowing a little oil again. The well was a small pumper for two years at 2,928 feet, and when it sanded up the liner and packer was pulled and the well started flowing at the rate of over 1,000 bbls. of oil a day and the same amount of water. Since the middle of February it has been sanded up again. No. 5 Kleberg, in a sand at 2,858 feet, is waiting to test. It is a northeast offset. Humble completed No. B-3 Dennett at around 2,242 feet, a good-sized pumper.

In the Laredo district the past week there were no producers completed. Drisco'l for the time being is going to abandon No. 9 fee in Duval County that made considerable oil in a tester and then went to water at a little less than 3,000 feet. This discovery gas well in that field is at 2,469 feet.

In the new Cole Field in Webb County, 4 miles west of the first Cole Gas Field, the Co'e Petroleum Co. is nearly down to completion depths on No. 54, which is a north offset to No. 51 and an east offset to No. 53, each of which are producers at about 2,330 feet. This is an interesting new spot and possible any day for it to run into still bigger production.

Cole Gas Field—Duval

Schott & Tafel's No. 1 Bruni, Survey 585, located 3,000 feet southwest of northwest corner and 150 feet to west line, is coring at 1,269 feet. Magnolia Petroleum Co.'s No. 2 Benavides is location at corner of B'ocks 146-147-194-195; No. 3 Benavides is location at corner of Blocks 144-145-196-197; No. 3 Benavides, Block 2, O'Hern & Seacord Subdivision, located 200 feet to southwest lines and 700 feet to northwest lines, has derrick up.

Humble-Reiter-Foster

Humble Oil & Refining Co.'s No. 7 Kohler, Survey 165, located 200 feet to north and west lines, is reworking at 2,807 feet total depth.

Driscoll Field

Robert Driscoll's No. 9 Driscoll, Survey 23, located 1,875 feet to west line and 2,850 feet to south line, at 3,005 feet total depth is to make another test; No. 11 Dr'scoll, Survey 448, is drilling at 300 feet.

Randado Field—Jim Hogg

Magno'ia Petroleum Co.'s No. 36 Merchants State Bank, Survey 415, is location. Lightfoot and others' No. 1 Palacious, Survey 287, Block 13, located 150 feet to north and west lines, is moving on.

Alworth Field

Alworth-Stevens-Hild's No. 11 M. Garza, Survey 39, Block 10, is location 215 feet to northwest lines and 518 feet to southwest lines, elevation 501 feet.

Schott Field—Webb

Magnolia Petroleum Co.'s (Carnahan) No. 1 Garcia, Survey 53, located 200 feet to south line and 500 feet to east line at 2,079-81 feet, tested dry and is now drilling at 2,200 feet.

Albercas Field

Newton Drilling Co.'s No. 1 Bruni, Block 64, Bruni Subdivision, 910 feet to south line and 365 feet to west line, is dri'ling at 40 feet.

Cole Field No. 2

Cole Petroleum Co.'s No. 54 Benavides, Survey 412, Block 5, located 632 feet to west line and 385 feet to north line, has derrick up; No. 55 Benavides, Survey 412, Block 4, located 150 feet to south and west lines, has derrick up.

Mirando Valley—Zapata

Wil'iam R. Jewell's No. 1 R. Hinnant, Survey 10, Block 4, located 150 feet to northeast and southeast lines, is drilling at 500 feet.

Luling F'eld—Caldwell

Pat M. Armstrong's No. 1 Hardeman, Miles G. Dykes Survey, 150 feet to northwest and southwest lines of farm at 2,050 feet, corrected depth, is in Buda with strong show of gas and is ratholing ahead. Magno'ia Petroleum Co.'s No. 8 F. M. Mercer is drilling at 2,190 feet. North & South's No. 1 Kelly is in schist at 7,570 feet; No. 2 Tiller is also in schist at 7,077 feet.

Kingsville Field—Kleberg

Humb'e Oil & Refining Co.'s No. B-3 Dennett, Lot 19, Section 38, at 2,253-63 feet cored oil sand and has set and cemented casing; No. 5 Kleberg, Lot 8, Section 40, nor'heast offset to No. 2 Flato, at 2,830-53 feet cored oil sand, set and cemented casing and is waiting on cement to harden; No. 6 Kleberg, Lot 1, Section 40, at 2,240 feet set casing and is waiting on cement to harden.

Oakville Gas Field—Live Oak

Simmons Oil Co.'s No. 1 Frank Church, 200 feet to south line and 600 feet to northeast corner of farm, has set surface casing at 100 feet. Company has six shal'ow gas wells completed here.

Nueces County

Alamo Drilling & Leasing Co.'s No. 1 Gallagher, Survey 158, located 1,215 feet to north line and 650 feet to east line, is shut down at 150 feet. Saxet Oil Co.'s No. 3 Weil, 250 feet south of railroad tracks, is setting surface casing.

Refugio Gas Field—Refugio

Houston Oil Co.'s No. 6 Rooke is dri'ling at 3,000 feet; No. 11 W. J. J. Heard is setting casing at 3,290 feet. Houston Gulf Gas Co.'s No. 1 Virginia Hallman is laying water and gas lines to location and preparing to spud in; No. 2 Shelly is at 3,307 feet waiting on casing; No. 5 W. Heard is drilling at 3,000 feet; No. 3 Ryals is drilling in at 3,300 feet; No. 1 Vance is standing at 3,600 feet. Saxet Oil Co.'s No. A-6 Heard is moving in machinery. George Williams, trustee, No. 1 Terrell, Martin Powers Survey, 6 miles southwest of Refugio, is testing.

White Point Field—San Patricio

Alamo Drilling & Leasing Co.'s No. 1 Hunter is drilling at 700 feet. Houston Gulf Gas Co.'s No. 1 J. M. Bennett is setting up machinery and is an offset to the Houston Oil well on the Steele lease. Saxet Oil Co.'s No. 1 Dennett, Ross Survey, Block 9, located 813 feet to south line and 658 feet to west line, is erecting derrick; No. 1 White Point Development Co. is drilling at 1,950 feet; No. 1 Hunter is building derrick.

West Gas Field—Zavala

Tritex Oil Corp.'s No. 2 West, Juan Fuentes Survey No. 43, located 366 feet to north line and 266 feet east of Uva'de-Batesville highway, has been spudded in.

Bexar County Completions

Schimmel Petroleum Co.'s No. 16 Kohler, Somerset Field, at 1,333 feet has been completed a 12-bbl. well; No. 17 Kohler, same field, at 1,325 feet, a 12-bbl. well; No. 18 Kohler, same field, at 1,325 feet, 12-bbl. well; No. 19 Kohler, same field, at 1,325 feet, 12 bbls.; No. 20 Kohler, same field, at 1,430 feet, 10 bbls.; No. 21 Kohler, same field, at 1,340 feet, 11 bbls.; No. 22 Kohler, same field, at 1,345 feet, 10 bbls., and No 23 Kohler, same field, at 1,345 feet, an 11-bbl. well.

Caldwell County

J. E. Latson's No. 1 Gomillion, J. Burleson Survey, 150 feet to northwest and southwest lines and southeast of Lytton Springs Field, has been abandoned, exact depth unknown.

Duval County

R. Driscoll's No. 9 Driscoll, Survey 23, in the Driscoll Field, which at 3,005 feet, total depth, first tested as larger gasser and then began to spray oil and later flowed salt water under heavy gas pressure and has been temporarily abandoned.

Jim Hogg County

Holden and others' No. 3 Jones, Share 27, Block 136, wildcat test, has been temporarily abandoned at 2,548 feet.

Medina County

Chacon Oil Co.'s No. 2 Jungman, Survey 31, at 1,728 feet, tested slight show of oil and is being abandoned.

San Patricio County

Ed Leach's No. 2 Collins, Edward McGloin Survey, Section 39, few miles northwest of Mathis at 2,385 feet, total depth, in sand at 2,379-85 feet, is estimated good for 35,000,000 to 40,000,000 feet of gas with 885 pounds shut in pressure and 675 pounds working pressure.

Kleberg County

Humble Oil & Refining Co's No. 3-B Dennett, Lot 19, Section 38, in the Kingsville Field, at 2,253-65 feet is on the pump and good for 75 bbls. daily.

New Locations

Houston Oil Co. is rigging up to deepen No. 1 Lambert in the Refugio gas field.

H. J. Hill's No. 3 fee in Travis County is shut down at 400 feet.

The Texas Company is making location for test near Ottine in Gonzales County where there is shallow production.

Rundus & Landus' No. 1 Frank Rundus, location near Bartens Creek in the Smithville section, Bastrop County, is erecting derrick and moving in machinery.

The Texas Company's No. 3 Osteen, W. C. Swearingen in the Dale Field in Caldwell County is a location 750 feet to southwest lines and 150 feet to southeast line and offsets Sun Oil Co.'s No. 3 Talley; No. 4 Osteen, same field and county, J. Gilbert Survey, is a location 150 feet to northeast and southeast lines of 26.5-acre tract; No. 1 O. T. Moore, J. Gilbert Survey in the same field, 150 feet to north corner of 77-acre lease and offsets the No. 4 Osteen, has derrick up.

The Moody Corp. is making location for No. 1 in the Randado Field in Jim Hogg County.

Southwestern Petroleum Co.'s No. 1 H. Beckwith, 1,320 feet south of the Nueces River in LaSalle County, and 1,388 feet to northwest lines of Survey 19, has been spudded in and is drilling at 100 feet.

NORTH END OF SOUTHWEST TEXAS SEEING LOT OF LEASE ACTIVITY

By B. D. Stevenson

SAN ANTONIO, Tex., Mar 19.—A string of counties too far east to be classed as West Texas and up to the present time with no particularly appropriate group name are seeing a lot of lease activity. Beginning on the north and coming down they are Menard, Kimble, Sutton, Edwards, Real, Kinney and Uvalde. They have been designated at times as counties on the eastern rim of the Permian basin but are probably too far east for that. The lease activity is north of the Balcones Fault and in an area where the Pennsylvanian is within reach of the drill. About one-fourth of Kimble County has lately been leased, mostly in the western and southern part. Pure Oil Co., Sun Oil Co., Magnolia Petroleum Co., Humble Oil & Refining Co., Dixie Oil Co., The Texas Company, Wilcox Oil & Gas Co. and Selby Oil & Gas Co. are the most prominent of those who have taken leases lately. In Menard County Moody Oil Corp. has erected a derrick and is moving in tools to a block of leases 16 miles west of the city of Menard and will drill on the George S. Allison ranch. Moody Oil Corp., Amerada Oil Corp and Magnolia Petroleum Co. have leased south of the city of Menard and The Texas Company has leased two blocks north of the town and is assembling material to drill on one of them on the Fritz Wilhelm ranch. Edwards and Real are equally active. Some little drilling is getting started now but the real activity in drilling may not start for some months. Most of the acreage is taken on 10-year paid up leases and the big companies will not do much drilling.

Caldwell County Test

Nearer to San Antonio the wildcat activity the past week has been rather featureless. Louis P. Schawe has spudded in No. 1 Ted Schawe, 8 miles west of Lockhart, in Caldwell County, in the Thomas Maxwell Survey. Oil men believe there is a structure out that way and various companies have done more or less drilling. Payne & Bond a couple of years ago drilled two wells and got Serpentine in each test but no oil. Guided by the logs of these wells and an old water well that had quite a showing of oil in a formation then unidentified but now thought possibly to be Serpentine, the new location has been made by Louis P. Schawe northwest of the other wells.

O. W. Killam, of Laredo, has abandoned his No. 1 Calvert in Guadalupe but is planning to start another on the Lynch farm north of Kingsbury in Guadalupe and still another in the Dale area in eastern Caldwell.

There are several wildcats for which tests are waited. Pat Armstrong is about ready to test his No. 1 Mangold, in Medina County, north of the Adams Field, that has a showing of gas at 940 feet, and J. A. Harper has not yet tested his No. 2 Nichols in Live Oak County, east of the Calliham Field that has a showing of oil at 1,168 feet.

Rollin V. Hill and associates are moving on to drill another wildcat south of the Alworth Pool in Zapata County. Oil production is spotted all up and down the Reynosa escarpment and there is quite a jump from the Alworth Pool down to the Charco Redondo in the southern part of Zapata. Hill is trying to pick up another producing spot and other wells drilled have had showings.

National Oil Co. is down about 2,200 feet in No. 1 Ball in Duval County a little east of the Driscoll discovery well. Driscoll got production at about 2,469

(Continued on Page 117)

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Boullion Dome Another Coastal Pool

Rycade Oil Corp.'s New Well Making 1,250 Bbls. Daily, Pinched In. Crude Now Being Shipped to Baton Rouge

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Mar. 19.—With the discovery well, good for 4,000 bbls. of pipe-line oil daily and flowing steadily pinched in at the rate of 1,250 bbls., the Bayou Boullion Dome of St. Martins Parish, Louisiana, took its place the past week as one of Louisiana's coastal fields. This is the second new field opened in South Louisiana within the past 45 days, the other being at Sorrento Dome, Ascension Parish, east of the Mississippi River.

The new well is Rycade Oil Corp.'s No. 2 Atchafalaya fee, 3,067 feet north and 1,736 feet west of the SE cor., Section 13-9s-8e, on the northwest side of the Bayou Boullion, sometimes termed the Bayou La Rampe Dome, in the extreme eastern part of St. Martins Parish almost on the Iberville Parish line, about 35 miles west of Baton Rouge.

This well came in flowing through a three-eighths-inch choke making an estimated 4,000 bbls. of pipe-line oil which tested 28.5 degrees gravity. Later samples have tested better than 30 gravity at 90 degrees. This production is from 20 feet of sand at a total depth of 3,044 feet.

Fortunately for the Rycade Oil Corp., Bayou Boullion is located advantageously for disposal of oil, and soon after the well was brought in, production was being moved to the Standard Oil Co. of Louisiana's refinery at Baton Rouge. The well is near the Grand River, a navigable stream, down which barges move to the Plaquemine River, and thence up to the head, where a system of locks is provided to lift the barges into the Mississippi River. By water route, the new field is only about 60 miles from the Baton Rouge refinery.

On a Small Island

The Bayou Boullion district is on a small island surrounded by the Grand River, Atchafalaya River, Bayou La Rampe and traversed by a number of other bayous, among which is Bayou Boullion. Like other fields in southern Louisiana, it is an extremely swampy district, 7 miles from the Southern Pacific and reached by boats from Crusel station.

The Bayou Boullion district has a history extending back several years during which a score of tests have been drilled by the Gulf Refining Co., a number of independent companies and operators, and by the Rycade Oil Corp. The latter company, however, has drilled only two holes, the first, No. 1 Atchafalaya fee, being abandoned February 3 at 3,916 feet because of a bad fishing job.

Rycade's first well was on the east side of the dome, Section 18-9s-9e, on the Grand River. When this was abandoned the rig was moved over on the northwest side of the dome where the present producer was drilled. Rycade already has rigged up for its third test.

The district previously had been checked thoroughly by both seismograph and torsion balance instruments. Shooting crews of the Gulf Refining Co. first went into the district determining on the dome but after drilling a number of dry holes let most of the acreage go. Rycade then entered buying the land in fee from the Atchafalaya Land & Development Co. Rycade still owns the bulk of the land around the dome although Gulf retains some nearby acreage.

In addition to the present production, the discovery well passed up a showing of oil in a sand at 2,500-08 feet and also a sand showing gas at 2,783-88 feet. A number of showings also were encountered in a few tests drilled from a half to three-quarters of a mile south of the Rycade well.

South Louisiana's other new field opened early in February by the Gulf Refining Co. at Sorrento Dome, Ascension Parish, continued to produce from the discovery well between 800 and 900 bbls. of pipe line oil while choked in the past week. No. 5 United Land Co., a test 600 feet west of the discovery well, and which tested salt water, was abandoned the past week, but No. 6 has been rigged up. The latter will be east of No. 4, the discovery well, and about midway between No. 1 and No. 4. According to calculations this should hit the high part of the cap and make a better well than the No. 4.

South Liberty Field

Interest of Gulf Coast operators continued to be centered in the mile north extension of the South Liberty Field. So far this district has proved very puzzling which has lowered the prospects of the pool in the minds of some operators. However, The Texas Company's No. 1 Green, the discovery well, which 10 days ago stopped flowing suddenly after it had been producing around 1,850 bbls. daily for two weeks, unexpectedly came back in the past week flowing around 1,500 bbls. daily.

At the time the well came back it was being rigged up to be put on the pump as it was found to have had a hole full of oil without pressure enough to flow it.

Among the irregularities so far in the field has been Abercrombie & Harrison's No. 1 Lacour which found a dry hole at 2,280 feet, at which level The Texas Company's extension well found its production. This test is within 100 feet of the producer and being slightly to the west is believed to be nearer on the dome. This test, however, was drilled on with the intention of "going to the salt," if necessary to test the district but Friday at a total depth of 2,590 feet it found 25 feet of oil sand.

Sun Oil Co.'s No. 1 Abshier, 50 feet east of Abercrombie & Harrison's No. 1 Lacour, on the other hand, Saturday encountered what is believed to be the pay sand at 1,980 feet. This is considerably higher than the former well and also The Texas Company's well, all of which are within a radius of 100 feet.

The Texas Company has started drilling in two more of its tests, the Nos. 2 and 3 Green. The former is an offset to the Sun Oil Co.'s test and the latter an offset to Abercrombie & Harrison's test.

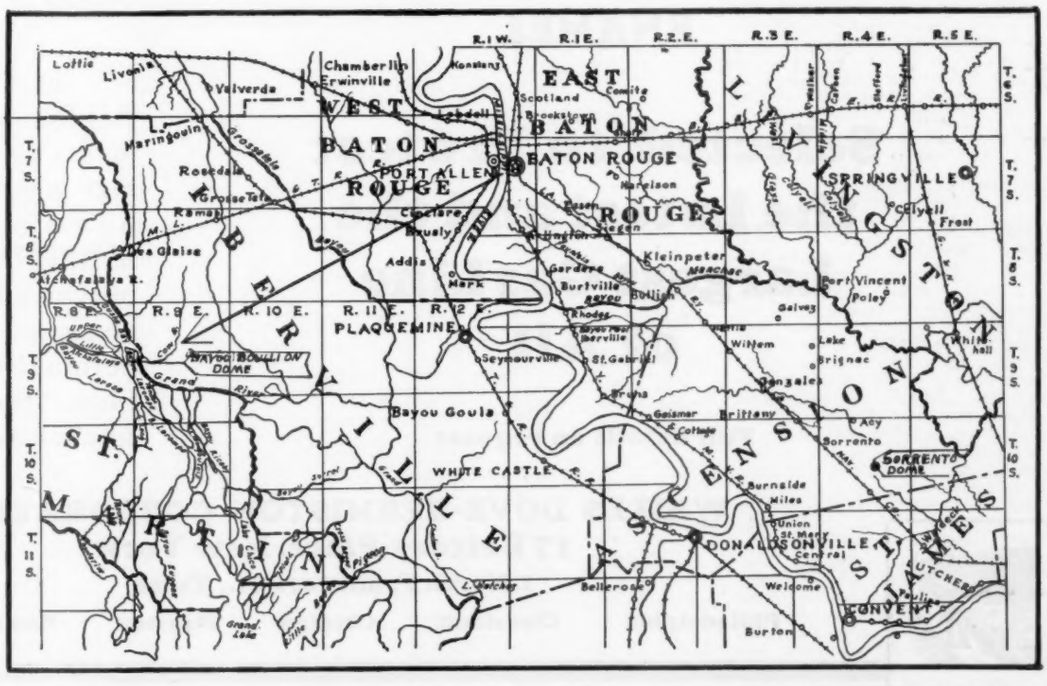
Operators also are watching the Hackberry district on the old dome, about 2½ miles east of the Kelso Bayou area where Calcasieu Oil Co. has three wells producing.

Interest, however, waned there when C. O. Nobles and associates' No. 1 Ellender, Section 27-12s-10w, failed to show up as had been expected. This test almost blew out early in February showing heavily of oil and indications pointed to a good producer, the first on the Old Hackberry Dome. This test was bailed the past week but did not show but very little oil. It then filled up 2,500 feet of fluid about half of which was oil but operators now do not expect it to make any more than a small pumper. The hole is 4,230 feet.

In the East Hackberry district, Yount Lee Oil Co.'s No. 6 State, which is in

(Continued on Page 122)

Loading crude on barge at Rycade Oil Corp.'s St. Martin Parish, Louisiana, well.



Map showing general location of Bayou Boullion (Bayou La Rampe) district of St. Martin Parish. Sorrento Dome also is shown.

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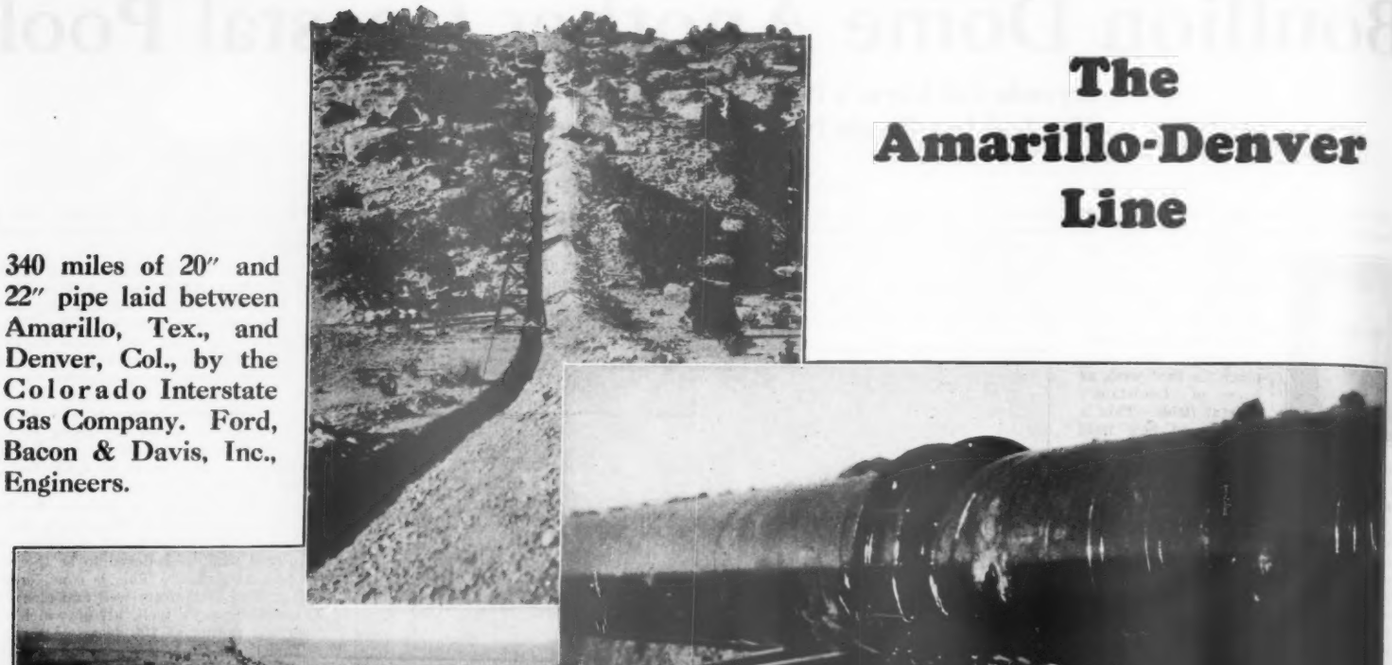

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Movement to Conserve Natural Gas Entirely Effective. Difficulties Being Encountered Elsewhere by Conservation Plan

By L. P. Stockman
Staff Correspondent, California Fields.

LOS ANGELES, Calif., Mar. 17.—California's gas conservation program involving an excess production of approximately 65,000,000 feet per day in the prolific Ventura Avenue Field, is now in full swing having got under way several days ago and while the absolute maximum has not yet been attained this should become a reality within the next 48 hours as the curtailment is approximately 95 per cent effective at present. The Associated, General Petroleum, Shell, and Petroleum Securities, the principal operators in that district are all striving to eliminate the excess production of natural gas which has been blowing off into the air because of inadequate pipe line facilities and a gas production in excess of market requirements. The Bolsa Chica Oil Co., the only other concern to have production at Ventura Avenue, has not found it necessary to make any curtailment because of the fact that it is not producing an excess of natural gas.

The high gas-oil ratio at Ventura Avenue has resulted in a reduction of approximately 10,000 bbls. per day in pipe line runs of crude oil as it has been found necessary to shut in this quantity of oil in order to effect the desired reduction in natural gas production. Official confirmation of the results accomplished to date is not yet forthcoming but it is expected that a definite statement of some kind will be issued in the near future.

In appointing his conservation committee of five, consisting of F. G. Stevenot, director of natural resources; A. B. Heron, director of finance; B. B. Meek, director of public works; U. S. Webb, attorney general; and W. J. Carr of the California Railroad Commission, Governor Young stressed the necessity of cooperation between state officials and producers of crude in order to eliminate all excess production of natural gas. The statement issued by Governor Young of California is of special importance as it indicates a willingness to back up any move by operators to curtail production in order to eliminate waste.

Value of Natural Gas

Governor Young stated that "the use of natural gas in California, and especially in the southern portion of the State, as an economical fuel in industry and for domestic uses, has meant so much to the extraordinary development of the State in recent years that its waste and loss in the enormous volumes now being turned into the air is a matter of serious concern, not only to the oil business itself but also to the public generally. This wastage is concomitant to an overproduction of oil and cannot be considered separate and apart from the latter. It is self evident that assurance of the continuance of an adequate supply of fuel at reasonable rates is clearly essential to our future progress and prosperity. Although I am satisfied that leaders of the oil industry are sincerely anxious for everything in the line of proper conservation, and have made earnest attempts to control production and curtail wastage, these attempts have so far met with but partial and intermittent success. I suggest that this committee call together in general conference representatives of the oil industry to see if some plan cannot promptly be devised to control or end a situation which is at once a challenge to the best thought in that industry and a detriment to the public welfare."

The successful initiation of the gas conservation program at Ventura Avenue as a result of the efforts of this committee has greatly stimulated the movement under way to limit the production of heavy crude and while the latter plan is not meeting with the reception originally anticipated it is a foregone conclusion that an additional curtailment in the production of heavy crude will eventually be brought about. It may be several weeks before any further heavy crude is shut in but it must come sooner or later as producers and refiners cannot continue to store heavy crude and refinery residuum indefinitely. The quantity of heavy crude to be shut in depends to a large extent upon the co-operation rendered by independent producers as their refusal to shut down or arbitrarily reduce current production precludes any constructive action by major producers and refiners. The West Front area of the Kern River Field, which produced approximately 575,000 bbls. of heavy crude during the month of February, is causing the curtailment committee more grief than any other single area due to stringent lease requirements and the unwillingness of some operators to temporarily limit production. Unless future negotiations are more successful the movement to curtail heavy production in this field will not be successful and a severe price slash in heavy oil may be brought about.

No Let Up in Drilling

Neither the gas conservation nor the plan to curtail the production of heavy crude contemplates a reduction in drilling operations or development work. On the contrary, it is hoped that operators will continue development work as a cessation of drilling would be unfavorably reflected in the economic structure. All of the major companies in California are co-operating in a general attempt to prevent a further reduction in personnel.

The breaking of St. Francis Dam in San Francisquito Canyon washed out practically all of the major oil and gas lines extending from the Ventura County and San Joaquin Basin Fields to Los Angeles during the early part of the week and while these facilities are still crippled they are being repaired as quickly as possible and shou'd be in service again within the next day or two. The Union, Pan American, General Petroleum and Midway Gas Co. all experienced disrupted service although the loss in oil and gas was relatively small due to the fact that operations were immediately suspended and all valves closed. The Pan American's 10-inch welded line running from Elk Hills to Los Angeles was washed out for a distance of about 1,500 feet while the Midway Gas Co.'s 12-inch natural gas line was out in two places. The General Petroleum's 8-inch line extending from the San Joaquin Valley to Los Angeles was washed out for about a mile but will be in service again tomorrow as repairs were undertaken at once. The Union lost three lines all told but none of them were main trunks. Production and development activities have been restricted in several of the Ventura County fields for several days as a result of the disastrous flood resulting from the breaking of St. Francis Dam due to the fact that many field men were pressed into relief service, but with relief crews well organized they are again back on the job.

Long Beach

Deep sand exploitation at Long Beach has been greatly stimulated by the staking of numerous locations during the past two weeks and the logging of exceptionally well-saturated oil sand in several projects below the 6,500-foot level. The Shell has been gradually increasing the scope of its drilling activities in this field for several months but the company stepped out last week and staked nine new locations. It is quite obvious that something very important must have developed in the Long Beach Field during the past few weeks to warrant this sudden expansion of work and a check of this activity brings to light some very interesting information. The Shell has only listed a few completions in the deep zone during the past few months but while other operators were increasing their production from time to time this company was systematically engaged in a very comprehensive exploration program and gradually increasing the number of drilling projects as developments warranted. As a result of this progressive drilling campaign the Shell will undoubtedly show a greatly stimulated production in this field within the next 30 days.

The most important feature brought out by the survey undertaken to determine the cause of the Shell's sudden increase in drilling activities is the fact that operators have heretofore only taken advantage of a portion of the deep zone now being exploited. Quite a number of the deep zone wells finished up to the present time have been brought in from above the 6,200-foot level but it is highly probable that many completions in the future will be carried down to below 6,500 feet. The Shell will probably capitalize on this additional penetration to a larger extent than any other operator in as much as this company has continued making hole on its various drilling projects while others concluded drilling and passed their wells for production.

The Shell has not broadcasted the fact that it has definitely proved up the existence of a much thicker oil sand than has heretofore been believed present but this conclusion is obvious in view of the fact that the company has four drilling projects below the 6,500-foot level at the present time and each of these wells in-

(Continued on Page 82)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Associated, No. 1 Cypress, Potrero	34- 2-14	5,408	testing
Associated, No. 2 Cypress, Potrero	34- 2-14	3,800	hd. sd. drilling
Smith & Carpenter, No. 1 Smith, Potrero	35- 2-14	5,282	gas well
Pet. Securities, No. 1 Connolly, Potrero	27- 2-14	4,906	hd. sd. drilling
Hurst Oil Corp., No. 1 Inglewood, Los Angeles Co.	28- 2-14	3,772	resume work
Mont. Clark Oil Co., No. 1 Browning, Monterey Park	26- 1-12	3,940	cleaning out
Associated, No. 1 Patterson, Pico	13- 2-12	5,442	fishing
Shell, No. 1 Mission, San Fernando	4- 2-15	4,953	abandoning
Shell, No. 2 Mission, San Fernando	4- 2-15	Rig	rigging up
Andrews, Otis, No. 1 Lancaster, Los Angeles Co.	23- 8-13	1,806	hd. sd. drilling
Woods, D. H., No. 1 Lancaster, Los Angeles Co.	5- 7-10	Mtl.	building rig
Security Pet. Co., No. 1 Lynwood, Los Angeles Co.	13- 3-13	4,293	sd. sh. drilling
Dominguez Ext., No. 1 Compton, Los Angeles Co.	27- 3-13	5,510	pipe trouble
San Clemente Oil Co., No. 1 Peck, Hawthorne	20- 3-14	5,760	suspended
Shell, No. 1 Dupree, Hawthorne	29- 3-14	5,380	set pipe
Easton & Smith, No. 1 Calabasas, Los Angeles Co.	19- 1-17	Mtl.	building rig
Scott & Currier, No. 1 Hawthorne, L. A. County	33- 3-14	140	suspended
White Behr, No. 1 Watson, L. A. County	21- 4-14	4,611	suspended
Buttrum, F. W., No. 1 Richfield, Orange Co.	36- 3- 9	3,900	gr. sd. drilling
Ohio Oil Co., No. 1 Anaheim, Orange Co.	9- 4-11	2,411	hd. sd. drilling
Olympic Refg. Co., No. 1 Sunset Beach, Orange Co.	19- 5-11	4,822	sd. sh. drilling
Kneuper, A. D., No. 1 Seal Beach, Orange Co.	10- 5-10	Rig	rigging up
Getty, Geo. F., No. 1 Seal Beach, Orange Co.	14- 5-12	3,561	hd. sd. drilling
Shell, No. 1 Stern, Orange Co.	22- 3-10	4,115	hd. sd. drilling
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	2,400	hd. sd. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	2,480	hd. sd. drilling
Davenport O. & G. Co., No. 1 San Marcos, San Diego	30-12- 2	365	hd. sd. drilling
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	378	hd. sd. drilling
Mills, J. P., No. 1 Pueblo, San Diego Co.	18-15- 3	2,375	hd. sd. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Bolsa Chica, No. 1 Kettleman, Kings Co.	30-23-19	3,502	plugging back
General Pet., No. 2 Ochsner, Kettleman Hills	28-22-18	6,770	fishing
South Coalinga, Well No. 1, Kettleman Hills	35-24-19	3,110	suspended
Monocline Dev. Co., Well No. 1, Kettleman Hills	7-21-21	4,308	suspended
McPhail, Hugh, Well No. 1, Kettleman Hills	13-24-18	2,100	suspended
Milham Expltn., No. 1 Kettleman, Kings Co.	2-22-17	6,890	br. sh. drilling
Shell, No. 2 Berlywood, Moorpark	32- 3-20	6,420	to abandon
Star Petroleum, No. 2 Canet, Ventura Co.	13- 3-23	5,759	hd. sd. drilling
Standard, No. 4 Saticoy, Ventura Co.	22- 2-22	1,360	gr. sd. drilling
California Western Oil Co., No. 1 Elkins, Ventura	5- 3-19	391	sd. drilling
Exline, Emma, No. 1 Saticoy, Ventura Co.	33- 3-21	Rig	rigging up
Petroleum Sec., No. 1 Diablo, Ventura Co.	26- 5-18	4,199	suspended
Parkford, E. A., No. 1 Strathern, Ventura Co.	5- 2-18	4,002	suspended
Shell, No. 1 Strathern, Ventura Co.	6- 2-18	4,322	hd. sd. drilling
Shell, No. 2 Oxnard, Ventura Co.	35- 2-22	Rig	rigging up
Miley Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	980	cleaning out
Keck Inv. Co., No. 1 Fillmore, Ventura Co.	35- 4-20	4,500	suspended
McAdams, J. E., No. 1 Buttonwillow, Kern Co.	26-29-23	4,950	sd. sh. drilling
Milham Explrn., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explrn., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well
Milham Explrn., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well
Milham Explrn., No. 4 Buttonwillow, Kern Co.	5-28-23	Rig	rigging up
Doheny-Stone, No. 1 Salisbury, Kern Co.	7-29-24	4,150	deepening
Southern Calif. Gas Co., No. 1 Buttonwillow, Kern	4-28-23	2,725	plugging back
Richfield Oil Co., No. 1 Semitropic, Kern Co.	21-26-22	1,620	suspended
Pacific Eastern, No. 1 Union Ave., Kern Co.	6-30-28	5,640	plugging back
Pacific Eastern, No. 2 Union Ave, Kern Co.	6-30-28	4,500	sd. sh. drilling
Jackson & Chamberlain, No. 1 Bakersfield, Kern Co.	19-29-28	150	sd. drilling
O'Donnell, J. E., No. 1 Fruitvale, Kern Co.	31-28-27	....	location
O'Donnell, J. E., No. 1 Greenfield, Kern Co.	31-30-28	802	sd. drilling
Superior Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,300	hd. sd. drilling
Stabler, W. W., No. 1 Comanche Point, Kern Co.	23-32-29	1,711	sd. drilling
Midway Northern, No. 1 Edison, Kern Co.	29-29-30	3,298	hd. sd. drilling
Shell, No. 1 Mon Bluff, Kern Co.	3-28-28	4,200	hd. sd. drilling
North American, No. 1-A Delano, Kern Co.	5-25-26	4,400	sd. sh. drilling
Fresno Madera Oil Co., No. 1 Clovis, Fresno	18-12-21	4,016	fishing
Barneyberg Oil Co., No. 1 Brown, San Luis Obispo	26-32-14	2,296	cleaning out
Richfield, No. 1 Wreden, San Luis Obispo Co.	10-29-17	3,130	suspended
Richfield, No. 1 Carissa, San Luis Obispo Co.	15-29-17	2,750	br. sh. drilling
Union Oil Co., No. 1 Huasna, San Luis Obispo Co.	34-32-15	1,300	hd. sd. drilling
San Luis Synd., Well No. 1, San Luis Obispo Co.	29-31-15	2,470	sd. sh. drilling
Sequoia Oil Co., Well No. 1, San Mateo Co.	13- 7- 5	1,608	br. sh. drilling
Shell, No. 1 Cowell, San Mateo Co.	8- 6- 5	5,906	hd. sd. drilling
Shell, No. 1 Butts, San Mateo Co.	16- 6- 5	1,808	hd. sd. drilling
Shell, No. 1 Mossi, Petaluma	8- 5- 6	1,440	gas well
R. Y. Hanlyn, Well No. 1, Alameda Co.	3- 5- 2	135	sd. drilling
Thomas & Hammill, Well No. 1, Alameda Co.	16- 3- 3	1,070	water trouble
Tepesquit Oil Co., Well No. 1, Santa Barbara Co.	3- 9-32	1,692	cleaning out
Becker, Geo. F., No. 1 Summerland, Santa Barbara	33- 4-25	3,045	testing
Twin State Oil Co., No. 1 Modoc, Santa Barbara Co.	20- 4-27	2,503	sd. sh. drilling
Fort Wayne Synd., No. 1 Goodell, Madera Co.	22-10-17	2,250	suspended
Continental Oil Co., No. 2 Smith, Colusa Co.	31-18- 4	4,300	cleaning out
Colusa Oil Co., Well No. 1, Colusa Co.	31-15- 4	370	hd. sd. drilling
Marland Oil Co., No. 1 Bradley, Monterey Co.	32-24-11	1,816	hd. sd. drilling
Shell, No. 1 Bradley, Monterey Co.	32-24-12	....	building road
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	1,882	oil in hole
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	2,878	hd. sd. drilling

Showing in Oregon Basin Important

Between North and South Domes of Field. Operations in Colorado, Utah, New Mexico and Montana

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Mar. 17.—A showing of oil in the Ferdig-Wyoming Oil Co.'s No. 1 Hough, midway between the north and south domes of the Oregon Basin structure in Park County, was the most interesting development of the week in Wyoming. It will be several weeks before its importance will be known. The Ohio Oil Co. had a failure in its No. 13 Harrison & Cooper in the Rock Creek Field, and the Midwest Oil Co. had one completion in Salt Creek, it being a 452-bbl. well in the Lakota sand. The Ohio Oil Co. is preparing to drill a deep test to the Lakota sand in the Big Muddy this summer, and the Producers & Refiners Corp. has shut down its deep test on the Ferris Dome in Carbon County which showed for a producer at 4,525 feet, only to develop water with the oil.

In New Mexico, a new location in the northern area of Lea County was made by Reynolds and others, and Ross & Grimm's No. 1 Daugherty in the Artesia Field in Eddy County was completed as a 15-bbl. well. Getty Oil, Inc.'s No. 1 Nicholas, in the Twin Hill's district, made 70 bbls. initial after a shot, and Gates, Holman & Rehn's No. 1 Murdock ran into sulphur water at 1,190 feet. The Union Oil & Mining Co.'s No. 2 Pine in San Juan County, encountered fresh water at 4,010 feet, but will be drilled deeper, and a showing of oil was found in the Johnson test in the Kutz Canon district at 1,940 feet.

In Colorado, interest is divided between the Continental Oil Co.'s gas and oil well on the McCallum Dome in Jackson County, which is showing up better than the discovery though completion has been delayed by a fishing job, and the outcome of several wildcats. The Union Oil Co. of California's No. 2 Foster, on the Wellington Dome, made 145 bb'ls. initial from a total depth of 4,500 feet, and the Willard Dome test in Logan County has suspended drilling after the Escondido Dome in Huerfano County found the granite at 2,000 feet. One well completed in Fremont County made 125 bbls. the first 24 hours.

Wyoming

The Oregon Basin operation in Park County again took the foremost place in interest the past week when the Ferdig-Wyoming Oil Co.'s No. 1 Hough, SE cor. Section 19-51-100, topped the Embar sand at 3,686 feet after cutting 22 feet of hard gray lime. Globules of oil began showing on top of the water and the sump was covered with rainbow colors. The tools were pulled and the 6¼-inch casing run to the bottom where it will be cemented before drilling into the sand. In the meantime ground is being prepared for a 1,000-bbl. flow tank and a battery of twenty 500-bbl. tanks, and connections will be made with the Illinois Pipe Line Co.'s line to Cody. It probably will be several weeks before the importance of the discovery will be known as drilling through the Embar to the Tensleep is tedious work. The well is located about midway between the tops of the north and south domes, 2 miles north of the Ohio Oil Co.'s No. 1 Baston, and 3 miles south of the Ohio's No. 1 Sonners, Account 1, the discovery well on the north dome. If the well proves to be an oil producer, it may mean that the entire area between the Baston and Sonners wells will be productive. The Ferdig-Wyoming lease upon which the Hough well is located comprises 960 acres and the well is in the southeastern corner of the tract. The well was drilled with cable tools. The top of the Chugwater was found at 2,623 feet, with red bed colorings at 2,797 feet. The gas sand in the Morrison was topped at 1,995 feet and gas was found at 2,900, 2,920, 3,020 and 3,045 feet in the red beds, the last one showing for about 5,000,000 feet. Small quantities of water were encountered at 3,215 and 3,415 feet.

The Ohio Oil Co.'s No. 1 Baston, NE cor., Section 6-50-100, the first well on the south dome to reach the Embar, that horizon being topped at 3,427 feet (corrected) about a month ago, is slowly drilling in, the sand having been penetrated to 3,470 feet at last reports. The hole is standing full of oil and whenever the bailer is run, the oil is sprayed out of the top. The well appears to be performing better in the upper Embar than the discovery on the north dome. It still has some distance to go before reaching the top of the Tensleep where the largest production was found in the discovery, 6 miles to the north.

The Ohio's No. 3 Sonners, Account 1, NW NW, Section 8-51-100, one-fourth of a mile west of the discovery, which topped the Embar at 3,351 feet where it had a good showing, has not yet commenced drilling in, the casing being cemented on the top of the sand. Same company's No. 2 Wilson, NW cor., Section 4-50-100, is drilling at 1,035 feet, using rotary rig from No. 1 Baston. The Cody Petroleum Co.'s No. 1 Klindt, SE NE, Section 7-51-100, is held up at 3,785 feet by a fishing job. It is 246 feet in the Embar and still has about 30 feet to go to reach the Tensleep. The flow of oil continues at around 700 bbls. per day. Same company's No. 2 Klindt, SE NE NE, Section 7-51-100, is drilling at 2,782 feet in the red beds. The Ohio Oil Co.'s No. 1 Sonners, the discovery well, has again been shut in after cleaning out for lack of a market for the oil. It was flowing around 450 bbls. per day when shut in. Linco Petro'eum Co. is moving in material for combination rig for No. 2 Frisby, Lot 2, Section 36-51-101, in SE NE of the section. This is on permit recently acquired from the Hoodoo Oil Co. Same company's No. 1 Rosseau, SW NE NW, Section 33-51-100, is drilling at 2,580 feet. Charles E. Orchard's No. 1 Rue, SW cor., Section 28-51-100, is still endeavoring to clear hole of telescoped casing. Continental Oil Co.'s No. 1-A State, NW cor., Section 16-51-100, is drilling at 1,920 feet. Producers & Refiners' No. 1 Frisby, SW cor. NE, Section 32-52-100, is dri'ling at 1,680 feet in shale. Other operations at Oregon Basin show no material changes.

Park County

The Ohio Oil Co.'s No. 1 Pulley, Section 27-52-100, on the Shoshone anticline in Park County, is drilling at 2,485 feet. Linco Petroleum Co.'s No. 1 Pulley, Section 13-52-101, Shoshone anticline, is rigging up rotary at 1,050 feet. Ross & Richards' No. 1, Section 28-52-101, is rigging up.

In the Big Muddy Field in Converse County, the Ohio Oil Co.'s No. 1-L, Section 9-33-76, has material on location for rotary rig to drill a test to the Lakota sand. It is not expected, however, that drilling will commence until spring.

In Carbon County, the Ohio Oil Co.'s No. 13 Harrison & Cooper, Section 2-19-78, Rock River Field, is being abandoned at 4,519 feet, having missed the pay. The Ohio has one other active operation in that field at present this being its No. 6 Harrison & Cooper, Section 3-19-78, drilling at 2,760 feet. The Producers & Refiners' No. 19, Section 25-26-87, Ferris Dome, is shut down at 4,525 feet. This is the test reported several weeks ago showing for a producer in the Tens'eep. Same company's No. 24, Section 26-26-87, is cleaning out at 1,950 feet, with total depth of 2,625 feet. Same company's No. 8, Section 7-26-89, Wertz Dome, is trying to unscrew two more joints of 15½-inch casing. This is the well in which 2,291 feet of 15½-inch casing was run. It has been having some trouble in getting fish tail bit through on account of a hole in the casing.

In Fremont County, the Texas Production Co.'s No. 1, Section 1-33-95, Alkali Butte structure, is delayed by frozen casing at 2,668 feet. The Zola Oil Co.'s No. 1, SE SE NW, Section 25-27-93, on the Crook's Gap structure, is shut down for the winter at 3,614 feet. An official states that the report that this rig had been moved away is incorrect and that operations will be resumed the coming summer. The 4¾-inch casing was cemented at 3,530 feet and at present depth a sand was encountered. This sand will be tested when operations are resumed and drilling deeper will be continued if necessary. Producers & Refiners' No. 1, Section 34-34-92, Muskrat Dome, is waiting for cement to set, total depth 2,950 feet.

Garland Dome

In Big Horn County, the Producers & Refiners' No. 3 Government, Section 24-56-98, Garland Dome, is rigging up to resume drilling after being shut down for the winter at 1,288 feet. Utah Southern Oil Co.'s No. 3 Government, Section 29-56-97, Garland Dome, is drilling at 2,695 feet in the red beds and carrying the 6⅝-inch casing.

In Sweetwater County, the Ohio Oil Co.'s No. 1 Wilson, Section 24-12-100, Hiawatha Dome, is drilling at 1,320 feet.

One completion in Salt Creek was reported for the week, this being the Midwest Oil Co.'s No. 19-L, SW Section 24-40-79, drilled deeper to 2,476 feet with an initial production of 452 bbls.

H. V. Meabon, contractor, has commenced plugging the wells on the Teapot Dome, following instructions from Washington. It is expected that the work of pulling casing, cementing wells, mudding off, draining and cleaning tanks and storing material will require close to two months' time.

New Mexico

Lea County had few developments outside of the routine the past week. Cecil Bordages' No. 1 Jennie Hughes, C S half, Section 25-19-38, which attracted considerable attention two weeks ago with a light show of oil and gas, had not yet made any additional depth. The show of oil was encountered at 3,060-70 feet and was followed by gas in a sand topped at 3,110 feet. The tools were blown up the hole where they lodged and made a fishing job necessary. No accurate figures can be placed on the gas flow at this time due to the tools being in the hole and cavings shutting off part of the flow, but the quantity is estimated at around 2,000,000 feet a day. Fishing for the tools now is in progress. Midwest Refining Co.'s No. 1 State, NE cor., Section 9-19-38, 4 miles north of the Bordages well, is drilling at

DALHOUSIE TURNER VALLEY WELL MAY EQUAL ROYALITE CO.'S NO. 4

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Mar. 17.—In the Turner Valley Field southwest of Calgary, Dalhousie Oil Co's No. 1, LSD 4, Section 18-20-2w5, which got the wet gas horizon in the deep lime at 4,565 feet, has got out the diamond drill tools. The well is reported blowing open, and making about 19,000,000 feet of gas a day. This is approximately the same wet gas production as Royalite Oil Co.'s No. 4 gusher. No official estimate has yet been made of the potential crude naphtha recovery of Dalhousie No. 1, but it is quite likely to equal Royalite's No. 4, which averages around 600 bbls. a day.

Royalite Oil Co.'s No. 8, LSD 9, Section 12-20-3w5, has struck a considerable flow of wet gas, apparently in the top of the Madison lime, at 3,676 feet. Efforts are being made to mud off with baroid. A core will be taken to definitely determine whether the well is in the lime or not. If it is, the test has got the lime at a rather high point, and results promise to be interesting.

Spooner Oils' No. 1, LSD 12, Section 13-20-3w5, has recovered the tools which froze in when the wet gas horizon was struck in the deep lime at 4,930 feet. After spudding around the socket the crew got a grip on the string and after almost a day's work were able to get out the bit. At last reports they were waiting for the well, which was still frozen at the bottom, to clear itself. Between 3,000,000 and 4,000,000 feet of gas per day comes from the upper horizons.

Vulcan Oils' No. 1, LSD 11, Section 13-20-3w5, is again frozen in the deep lime. The tools have been at the bottom of the hole since the well was drilled in more than a year ago with the result that production has been considerably interrupted by intermittent freezing. A determined effort will be made to recover the tools. Vulcan's No. 2, same LSD, is reported drilling at 4,825 feet.

McLeod Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, which got production last month in the Madison lime at 3,915 feet has been steadily increasing its production. It is now reported averaging between 145 and 150 bbls. a day, the soft nature of the dolomite in this well apparently facilitating the flow. McLeod's No. 2, same LSD, has spudded in.

Royalite Output

For the month of February the Royalite Oil Co.'s No. 4 naphtha gusher, LSD 12, Section 7-20-2w5, showed a total output of 18,287.6 bbls. of crude naphtha, averaging 633 4 bbls. a day, compared with an average of 627 bbls. in January and 656 bbls. in December. The latter figure established a record for the well. Royalite Oil Co.'s No. 7, LSD 3, Section 13-20-3w5, made 3,076 bbls. in February, an average of 106 bbls. a day; it has been gradually increasing its production, and is reported to have gone as high as 125 bbls. this month. McLeod Oil Co.'s No. 2, LSD 16, Section 1-20-3w5, made 1,380.5 bbls. in the month, an average of 47.6 bbls. Illinois-Alberta Oils' No. 1, LSD 14, Section 12-20-3w5, made a total

(Continued on Page 113)

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2,325 feet in salt and red shale. The salt was topped at 1,625 feet. The Marland Oil Co.'s No. 1 Eaves, SW NE, Section 19-26-37, is drilling at 1,700 feet in salt. The salt was topped at 1,173 feet. The Marland's No. 1 Seideman and No. 1 Roberts wells have not yet commenced spudding and it probably will be several weeks before the Gypsy Oil and Empire Gas & Fuel Co.s' Lea County tests are under way. One new location was announced for Lea County, this being Reynolds and others' No. 1 C SW, Section 29-13s-37e, approximately where the Gibson Oil Corp. made a location some time ago and then abandoned it. It is about 35 miles north of the Midwest's No. 1 State on the Hobbs high, and in an area that has not been tested

Eddy County

In Eddy County, Ross & Grimm's No. 1 Daugherty, NW cor. SE, Section 3-17-27, in the Artesia district, was completed as a producer after being shot with 80 quarts at 1,945-2,000 feet. It made one flow after the shot and swabbed 15 bbls. in 24 hours, the oil being lowered to 1,507 feet where the casing had been set. It was not swabbed below the casing. Getty Oil, Inc.'s No. 1 Nicholas, NW NW, Section 25-20-29, in the Twin Hil's district southeast of the Artesia Pool, has been listed as a completion. It was shot with 40 quarts at 1,359-70 feet, with a total depth of 1,384 feet, and had an initial production of 70 bbls. Same company's No. 2 Dooley, NW NW, Section 24-20-29, is shut down for boiler repairs at 1,060 feet. It bottomed the salt at 985 feet and had a show of gas at 1,060 feet. The salt was topped at 350 feet. Gates, Holman & Rehn's No. 1 Murdock, SW cor. NE, Section 7-21-28, is cleaning out at a total depth of 1,260 feet to run the 6⅝-inch casing to bottom. It encountered sulphur water at 1,190-1,215 feet, making eight bailers per hour. This is so far rather disappointing. It has not, apparently encountered any salt up to this time. The location is 6 miles southwest of the Getty No. 1 Hinkle well which had an initial production of 80 bbls. at 1,362-68 feet. Hammond and others' No. 1 Miller, SE SW, Section 15-16-25, is drilling at 1,720 feet. Snowden & McSweeney's No. 1 Lawrence, NW cor., Section 35-20-29, has commenced spudding and is drilling below 100 feet.

In Chaves County, the Arena Oil Co.'s No. 1 Wilkins, NE cor. NW, Section 18-13-31, is drilling at 3,355 feet in gray lime. The Barrendo Oil & Gas Co.'s No. 1 Roswell, SW cor., Section 5-10-24, is drilling below 550 feet and is reported to have had a show of oil and gas at 520 feet. The Buffalo-Roswell Oil Co.'s No. 1 State, SW cor., Section 24-11-27, is drilling at 4,275 feet.

San Juan County

In the northwestern part of the State, the Union Oil & Mining Co.'s No. 2 Pine, SE SW, Section 8-29-9, in the Blanco district in San Juan County, one of the few deep tests in that area, ran into fresh water at 4,010 feet. The sand was drilled 7 feet and the water rose 100 feet. This test was held up for a year at 2,950 feet by an unusually difficult fishing job. At that depth it had good showings of oil and gas in the Picture Cliff sand and the expensive fishing job was undertaken in the hope that production might be found in the Mesa Verde. Consideration was given to plugging back to the upper sand and shooting in an effort to make it a producer, but when it was found that the water could be bailed down, drilling was resumed. The 6⅝-inch casing was set at 3,000 feet and the remainder of the hole is open.

A Johnson, trustee's No. 1 Viles, SW Section 34-29-11, in the Kutz Canon district, attracted considerable attention this week when the tools came up coated with oil from a depth of around 1,940 feet. Drilling was continued to about 1,962 feet, but the showing did not prove to be commercial and operations were suspended to await the arrival of officials. This well is making considerable gas from the Picture Cliff sand above the oil showing. It is believed that some 40 to 50 feet of the Picture Cliff formation still lies below the present bottom and it is probable that this will be tested before disposition of the well is determined. It is located 1,800 feet north of the Congress-National well which is shut in as a small gasser. The San Juan Petroleum Co.'s No. 1 Umbenhour is underreaming to lower casing to bottom at 2,885 feet in an effort to make a water shutoff. Water was successfully shut off at 2,850 feet, but another 30 feet put it into warm salt water.

The Huntington Park Oil Co.'s No. 1 Goede, SE SE, Section 29-30-9, in the Blanco district, is fishing for bailer at 4,580 feet. A stratum of coal was cut at 4,566 feet. Continental Oil Co.'s No. 17 Santa Fe Corp., Section 2-29-19, Rattlesnake Dome, is drilling at 4,461 feet. The Kutz Canon Oil & Gas Co.'s No. 1 Day, SW SW, Section 29-28-10, in the Kutz Canon district, is moving rig to location. This company has filed its articles of incorporation at Santa Fe showing it is incorporated for $1,000,000, by J. A. McCarthy, Frank A. Webber and Forest Cahoon, all of Farmington.

Utah

The Midwest Exploration Co.'s No. 3 Ashley Creek, Section 23-5-22, on the Ashley Creek Dome in Uinta County, which was reported last week having encountered sulphur water at 2,115 feet in sand topped at 2,065 feet, has not yet made any new hole below the bottom at 2,322 feet. Underreaming is in progress to lower the 8¼-inch casing to bottom for a formation shutoff when drilling will be resumed towards the Sundance, if the present horizon is not that sand, and possibly on to the Park City at 4,000 feet. Same company's No. 1 Early, Section 13-4s-6w, Duchesne structure, is drilling at 3,128 feet in gray shale. Continental Oil Co.'s No. 1 Boundary Butte, Section 23-43-92, San Juan County, is drilling at 3,470 feet. Western Venture Corp.'s No. 1 Krumvieda, Section 6-5s-21e, Uinta County, is drilling at 676 feet.

Utah Southern Oil Co.'s No. 1 Canyon, Section 27-41-19, San Juan County, is drilling at 1,785 feet in lime. Same company's No. 1 John L. Shaffer, Section 36-26-20, Cane Creek Dome, drilling at 625 feet in gray lime. The Phillips Petroleum Co.'s No. 1 Schirk, C NE, Section 16-27s-16e, Barrier Creek anticline, Wayne County, will soon be under way. Road to the location has been completed after two months' work and materials and rig are being moved in. This is to be a test of the Pennsylvanian and is expected to go to about 4,300 feet. The Price River Petroleum Co.'s No. 1, Section 16-14-10, Carbon County, is reported to have a showing of oil and gas at 2,675 feet and a water shutoff will be made before going deeper. The Texas Production Co.'s No. 1 Shipley, Section 5-27-14, Sweetwater structure, Wayne County, is shut down for orders at 2,885 feet. It has been tied up for some time at this depth with a fishing job.

Colorado

The Continental Oil Co.'s No. 1 Peterson, C SW SW, Section 1-9n-79, North McCallum Dome, in Jackson County, which last week was reported coming in as a gas well at 5,115 feet, has not yet been tested or drilled any deeper due to obstructions in the hole, but it is giving evidence of being a better well than No. 1 Sherman, the discovery, which came in in December, 1926, and which is located one-fourth mile to the south. The tools were blown up to within 600 feet of the top of the hole, where they became entangled with the cable, and were followed by muck and rock from the bottom which was forced up around the tools and shut off the flow in the 6¼-inch casing. Shortly after this bridge was formed the gas began to make its appearance between the 6¼ and 8¼-inch strings and was followed in 48 hours by excellent showings of oil.

The discovery well blew wide open for more than a week before the oil began to appear. The oil is almost water white and has more the appearance of gasoline than crude. While it is not at present coming out in a frozen state as in the discovery well, this probably is due to the slower expansion caused by reduced flow and eventually it is expected to duplicate the performance of the "ice cream" well. The oil and gas are supposedly coming from the top of the Muddy, or first sand in the Dakota series. The sand was found approximately 30 feet lower, based on sea level datum, than in the discovery, and this probably accounts for the favorable indications of it being a better oil well. The work at present is directed towards recovering the tools. When this is done, the well probably will be killed so that the condition of the hole can be determined with a view to going on down to the main Dakota sand, if possible.

This operation looks very promising and if the freak conditions of carbon dioxide gas with crude oil are not present in the lower horizons, this may become a very important pool. The structure is approximately 4 miles long and three-fourths of a mile wide and has a closure of 1,600 feet. The same company's No. 1 Pollock, SE SE, Section 2-9-79, one-fourth mile to the west of the Peterson well, is delayed at 4,900 feet by a fishing job, it being necessary to pull the 6¼-inch casing to recover an underreamer lug.

Showing Gas

On the south dome the Continental's No. 1 Hoye, Section 34-9-78, is drilling at 4,730 feet. It is showing some gas and is believed to be the caprock overlying the Muddy sand. This is the pioneer well on the south structure at this depth, former tests by other companies never having reached the horizon in which this well is drilling. The North Park Oil Co.'s No. 1 Goettler, NE NE SE, Section 9-6n-82, on the Crosby Draw structure, in Jackson County, is preparing to resume at 460 feet where it was shut down for the winter. This is a shallow test, the Dakota being expected at 700 to 800 feet. When it was shut down, it had a show of waxy oil at 430 feet, which a few feet deeper turned to a live green oil. The Crude Oil Detector Co.'s No. 1 Hunter, Section 31-11n-79, in the Cowdray district, is still shut down at 3,504 feet, having been idle since last fall, but drilling is expected to be resumed shortly. The Producers & Refiners' test on the Fuller anticline, tentative location for which was reported last week, is not expected to get under way until spring opens. These are the only operations in Jackson County, though one or two others are among the probabilities as soon as weather conditions are favorable for moving in.

Wellington Dome

The Union Oil Co. of California's No. 2 Foster, C NE SW, Section 30-10-68, on the Wellington Dome, in Larimer County, a joint well with the Texas Production Co., which topped the Muddy sand at 4,490 feet last month, is listed as a completion at 4,500 feet, with a production of 145 bbls. the first 24 hours. The well had been cored deeper into the sand and showed some water, so only the 10 feet of sand is being produced. The well was swabbed for some time before going on the pump and it is expected to settle to around 100 bbls. This is the farthest north of any producer on the structure and appears to be just about on the edge, though it proves up a little additional acreage.

The Northeastern Colorado Oil Co.'s No. 1 State, Section 36-8n-55, on the Willard structure in Logan County which has proved to be a very important test on account of its location out in the plains region away from the mountains, is having more difficulties. It passed out of sand at 5,576 feet and went back into shale. The sand is supposed to be the Lakota, or lower member of the Dakota series. The main Dakota sand had water in the bottom and the Lakota showed a little gas. The quantity of gas is sufficient for it to be lighted after coming through a column of 3,500 feet

(Continued on Page 129)

PERRY COUNTY MOST ACTIVE DISTRICT IN THE SOUTHEASTERN OHIO AREA

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Mar. 19.—There were but few completions in the eastern field and only a very few better than the general average. Heavy rains have put the roads in such bad condition it is next to impossible to get drilling material to the fields A good many locations have been made and in other places rigs have been completed and nothing more done. This condition is most noticeable in West Virginia. If it were not for the gas companies there would be very little doing in West Virginia. Some of the oil companies that have gas territory under lease are quite active, claiming it is more profitable to drill for gas than light oil wells.

Best Completions for the Week

The best completion for the week is in the northwest quarter of Section 24, Ward Township, Hocking County, Ohio, the Kachelmacher Estate's No. 28 on the James J. Tracey estate. The well produced 141 bbls. the first 24 hours after shot in the Clinton sand. The sand at this location was reached at a depth of 3,340 feet and the pay at 3,374 feet. In Lot 5, Hopewell Township, Muskingum County, I. C. Robison and others got a 20-bbl. producer at a test on the J. M. Fink farm.

In the southeast quarter of Section 20, Westland Township, Guernsey County, the Davis Brothers Co. has completed a test on the John Ruby farm, good for 65 bbls. a day in the Niagara lime at a depth of 3,516 feet. In the northeast quarter of same section and township, the Leonard Oil & Gas Co.'s No. 7 on the James Joyce & Co.'s farm is good for 50 bbls. a day in the same formation.

In the northeast quarter of Section 24, Richland Township, Holmes County, John Mullet has completed a test on the Alexander Snow farm good for 15 bbls. a day in the Clinton sand. In the central part of Section 12, Sutton Township, Meigs County, the Ohio Fuel Supply Co. has started to drill a test on the Nina Monison farm.

West Virginia

In Jefferson district, Lincoln County, West Virginia, the Foote Oil & Gas Co.'s test on the Don Stowers farm is a gasser in the Berea grit. In Carroll district, same county, L. R. Sweetland's No. 29 on his own farm, is a gasser in the same formation.

In Barboursville district, Cabell County, Wilson & Mowery's test on the Harris-Meadows farm is a gasser in the Berea grit. In Church district, Wetzel County, the Monongalia West Penn Electric Co. has a gasser in the Big Injun sand at a test on the George Renner farm. In Greene district, R. Warden has a rig completed on the Oliver Midcap farm. In Liberty district, Marshall County, the Marshall-Preston Oil Co. has a rig up on the John Williams farm. In Clay district, Hancock County, F. L. Freshwater has the rig completed for a test on the John Gilson farm.

In Pawpaw district, Marion County, the Carnegie Natural Gas Co.'s test on the E. C. Wilson farm is a gasser in the Fifth sand. In Mannington district, the same company is fishing at 2,500 feet on the W. R. Grubb farm. In Winfield district, same county, the Nebo Fuel Co.'s test on the John Kimble farm is a duster in the Big Injun sand. In the same dis-

(Continued on Page 72)

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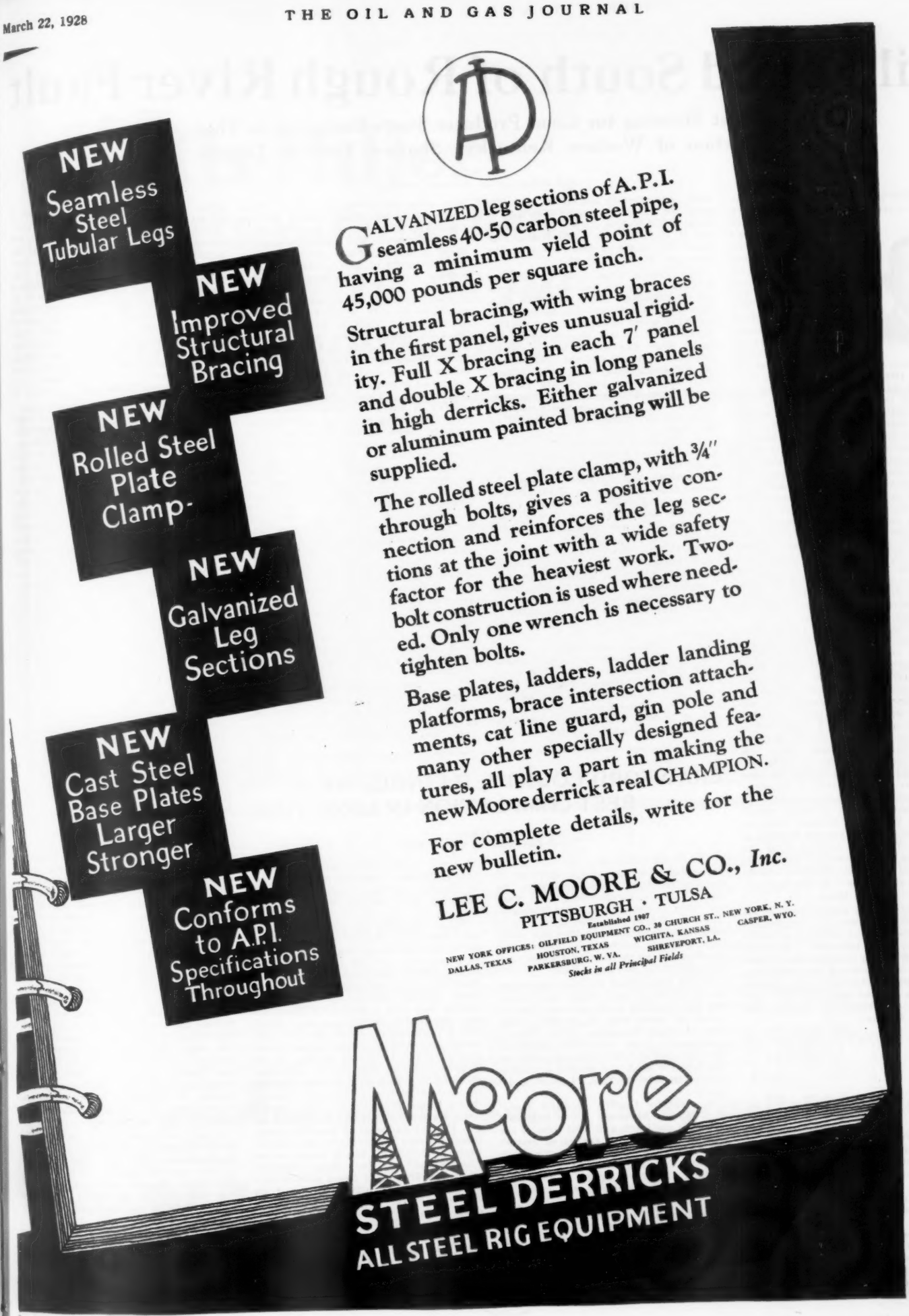
Its strength, by the use of seamless pipe for leg sections, is unusually great; the ease and rapidity with which it is erected is surprising; its rigidity has never before been attained. Interchangeable fronts make it adaptable to any purpose. It conforms strictly to A. P. I. specifications.


NEW
Seamless Steel Tubular Legs
NEW
Improved Structural Bracing
NEW
Rolled Steel Plate Clamp-
NEW
Galvanized Leg Sections
NEW
Cast Steel Base Plates Larger Stronger
NEW
Conforms to A.P.I. Specifications Throughout
GALVANIZED leg sections of A.P.I. seamless 40-50 carbon steel pipe, having a minimum yield point of 45,000 pounds per square inch.
Structural bracing, with wing braces in the first panel, gives unusual rigidity. Full X bracing in each 7′ panel and double X bracing in long panels in high derricks. Either galvanized or aluminum painted bracing will be supplied.
The rolled steel plate clamp, with 3/4″ through bolts, gives a positive connection and reinforces the leg sections at the joint with a wide safety factor for the heaviest work. Two-bolt construction is used where needed. Only one wrench is necessary to tighten bolts.
Base plates, ladders, ladder landing platforms, brace intersection attachments, cat line guard, gin pole and many other specially designed features, all play a part in making the new Moore derrick a real CHAMPION.
For complete details, write for the new bulletin.
LEE C. MOORE & CO., Inc.
PITTSBURGH · TULSA
Established 1907
NEW YORK OFFICES: OILFIELD EQUIPMENT CO., 30 CHURCH ST., NEW YORK, N. Y.
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Stocks in all Principal Fields
Moore
STEEL DERRICKS
ALL STEEL RIG EQUIPMENT

Oil Found South of Rough River Fault

Test Showing for Good Producer Starts Campaign in That Section of Western Kentucky. Shallow Pool in Torrent

By Whit
Staff Correspondent, Kentucky-Tennessee

HARTFORD, Ky., Mar. 19.—There has been a great deal of talk about there being no oil south of the Rough River fault in the western division of Kentucky, but the finding of what shows for a good producer seems to disprove the theory. The new well was drilled on the B. M. Coomes farm, 6 miles east of Hartford, the county seat of Ohio County, by members of the Hartford Dredging Co., and is the most important find of the week within the borders of the Blue Grass State. The well was drilled to a total depth of 907 feet, but was given a shot in an upper sand at a depth of 584 feet, where 35 feet of good oil sand was passed through, and is reported as good for 75 bbls. initial production. This find has caused unusual excitement and much trading in leases has taken place on the south side of the fault. The well opens up an entirely new producing area, as there is no drilling within a long distance, the closest being on the far side of Beaver Dam, in what is known as the Sunnydale section of the north. There was 350 feet of casing set in the test and the contracting work was done by Driller Bowers. The whole drilling of the hole was an easy and satisfactory one.

Another interesting find in the same area of the State was made by the Weideman Oil Co., of Cleveland, Ohio, which brought in its No. 1 on the Field farm, an offset to the W. G. Hayden farm well, near Andersonville, in Daviess County. This well was cleaned out and put on the pump, after which it put 124 bbls. of oil in tankage in 5 hours and 15 minutes, and looks like one of the best producers found in the field. There was 12 feet of pay at a depth of 1,030 feet, and it should make from 150 to 200 bbls. in a 24-hour run, estimating it conservatively.

A nice shallow pool is being opened in District 20, of the Torrent Field, in Wolfe County, in the eastern division of Kentucky. The wells are not large but so far they have shown a production close around 10 bbls., the best looking proposition in that part of the State.

Week's Work

A summary of the week's work in the Kentucky fields shows 18 completions, 13 producers with an initial production of 651 bbls., 4 dry holes and 1 gas well. Compared with the previous week there were 4 less completions, 2 less producers, 189 bbls. less production, same number of dry holes and one more gas well. The wells were distributed by counties and districts as follows:

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Ohio	10	6	275	4	0
Daviess	3	3	340	0	0
Wolfe	3	3	30	0	0
Warren	1	1	6	0	0
Clay	1	0	0	0	1
Total	18	13	651	4	1
Last week	22	15	840	7	0
Difference	4	2	189	3	1

February Oil Runs

A total of 442,255.90 bbls. of crude was reported run by the three pipe lines making reports from Kentucky, not including the runs of the Stoll Oil Refining Co. which is running on an average of better than 12,000 bbls. monthly from the Glasgow Field of Barren County, also some oil from the Tennessee Field. Of this amount 203,473.10 bbls. were run from the eastern division and 238,782.90 bbls. from the western division.

The runs of the Cumberland Pipe Line Co. from the eastern division of Kentucky amounted to 203,473.10 bbls. The runs for the week ending February 4 were 49,399.36 bbls.; week ending January 11, 50,026.63 bbls.; week ending February 18, 53,868.58 bbls.; week ending February 25, 50,178.53 bbls.

The Illinois Pipe Line Co. handled through its western Kentucky lines a total of 193,668.91 bbls., or 344.76 bbls. more than in January. The increase was not what would be expected, but weather conditions were bad almost during the entire short month, but with better weather conditions and the vast amount of wildcatting being done, it is evident that the western division will make a better showing this year than the eastern division, unless some new productive areas are developed in the east end of the State.

The Paragon Development Co. runs from Barren County during February amounted to 41,273.38 bbls., and from Cumberland and Clinton Counties 3,840.51 bbls., or a total of 45,113.89 bbls. This company's runs from Barren County is the largest for any month since the pipe line was constructed in the county.

The Paragon Development Co. ran during February from Clay County, Tennessee, fields a total of 2,615.68 bbls., and from Pickett County, 178.22 bbls., making this company's total runs from the two States for February of 47,907.79 bbls., or 26,044.73 bbls. more than for January.

Eastern Kentucky

There is a little flurry in development work in the Torrent Field of Wolfe County, in the eastern division of Kentucky and in District 20, where shallow production is found with an average of around 10 bbls. daily for the new wells which look profitable to drill. While no large wells are anticipated it is felt that producers of the 10-bbl. variety will be found and will result in a good production at Torrent. The wells are slightly ahead of production and about 2½ miles from the town of Lecco, where the Petroleum Exploration Co. has large holdings.

The Petroleum Exploration Co. has purchased from D. N. Baker and others of Stanton a block of 3,000 acres of leases in Powell County, with two gas wells, one each on the M. D. Rogers and R. C. Crow tracts. The gas shows excellent staying qualities and is found around an average depth of 400 feet. The Exploration company drilled a test a number of years ago near Stanton and upon the finding of a nice gas showing, recently leased additional farms in the vicinity and then acquired the Baker interests, and expects soon to start an active drilling campaign on the holdings for both oil and gas, either product being of value as the company has a gas line into Lexington and other towns along the route of its 55-mile gas line from the Owsley County gas area. This company has recently brought in a nice gas well in a test on the Alex Milton farm, in Clay County, which is now shut in.

In the Torrent area of Wolfe County, Amp Burnett has what shows for a 10-bbl. shallow sand pumper on the John Bush farm, in District 20. Brenner, Adams and others' No. 1 Adams farm, same area, is also good for 10 bbls., as is M. B. French and others' No. 1 on the Dewey Chapman farm, District 20, Wolfe County.

Western Kentucky

Wildcatting is spreading over a vast area of territory in the western division of Kentucky, in Union, Henderson, Daviess, McLean, Ohio, Hancock, Breckenridge, and Muhlenberg Counties and it is estimated that as soon as better weather prevails that more than 100 strings of tools will be running and the activity displayed in leasing may show double that number, as operators from all sections of the country are getting a foothold and the cheaper drilling is an attraction, especially to the operator who has been developing territory at depth of more than 2,000 feet. A big block of territory has been taken under lease in the southwestern portion of Warren County, and jogging over into both Simpson and Logan Counties, to the southwest of the Bowling Green Field, and a number of tests will be drilled.

A well that will be watched with much interest is that drilling by the Bartiletti-Meany Development Co., of Pittsburgh, Pa., on the T. B. Sanders farm at Birk City, in the extreme western part of Daviess County, on a block of 5,000 acres which this company has taken over and will drill three tests. It is close to the Henderson County line and much leasing has been done in that county on account of the test and the good looking surface indications. The first of the three wells has been started and the other two will await the drying up of the roads so material can be moved for the locations. Should these wells prove commercial producers it will add a large area to the Owensboro Field. Some years ago oil was found at the town of Newman to the north of Birk City, on the Babe Jett farm, at a depth of 800 feet, but the territory never developed, as there was no demand to speak of for oil at that time. The old well is still possible for a producer and will no doubt in a short time be cleaned out and tested with further testing of the territory by the drilling of new wells. Other tests were drilled in the western part of Daviess County that were likewise abandoned, although in nearly every instance showings of oil were found. Deeper drilling might bring a reward and open a new producing pool.

Ohio County Wells

The important well of the week in Ohio County is that of the Hartford Dredging Co. on the B. M. Coomes farm, about 6 miles east of Hartford, the closest production being from the Sunnydale Field. What makes the well an interesting one is the fact that it was found on the south side of the Rough River fault, where most people interested in oil gave their opinion that no oil would be found. The well on the Coomes farm struck a pay sand at 584 feet, with 42 feet of sand that made a showing, but the owners concluded to go deeper and sent the drill to a depth of 907 feet, but failing to find any oil at that depth, got a well reported good for 75 bbls., from the shallow sand. This find will encourage operations on the south side of the fault and leasers have been active securing acreage since the shallow sand was struck. A number of blocks of acreage have been secured and wells will be drilled to test the territory.

Young and Less' No. 3 on the Ollie Ezell 80 acres, to the northwest part of the Ambrose Pool, near Bells Run, is in and reported good for 75 bbls. initial production. In this well a string of 000 feet of casing was set, with a sand found from 694-721 feet and shot with 100 quarts.

Daly and Lohman's No. 4 on the Ollie Ezelle 50 acres, between the Ambrose Pool and Bells Run, is in the sand and making a good showing. These are well-known operators of Cleveland, Ohio.

(Continued on Page 72)

CRAWFORD COUNTY, ILLINOIS, WELL BEST COMPLETION IN LONG TIME

By Whit
Staff Correspondent, Central West

FINDLAY, Ohio, Mar. 19.—Little was accomplished in any of the divisions of the Central West Field, comprising the Lima Field, of northwestern Ohio, Central Ohio, Indiana, Illinois and Michigan. The only one of the divisions failing to complete a well was the Michigan territory, although several wells are nearing the depth where the Dundee Travers sand is found in the Muskegon Field.

In the Lima Field the best completion was H. F. Kelly and others' No 3 well, 750 feet from the north and east lines of the J. M. Miller farm, in the SE of Section 11, Bath Township, Allen County, northeast of Lima. This well topped the Trenton sand at 1,319 feet and drilled 48 feet into the sand, and showed a production of 40 bbls. the first 24 hours under pump.

In Auglaize County, Moulton Township, Wesley Sprague's No. 8 well, 800 feet from the south and west lines of the Charles Fritz farm, in the SE of Section 16, struck a dose of salt water at a depth of 1,203 feet and was abandoned as a dry hole. Sand was struck at 1,178 feet and drilled 25 feet in the sand where the salt water was encountered.

North of Tiffin, in Liberty Township, Seneca County, J. H. Murphy & Son found the top of the sand in No. 3 well, 800 feet from the north line and 250 feet from the east line of the Griffith & Leister farm, in the SE of Section 20. The well was drilled 130 feet into the sand to a total depth of 1,482 feet; the first 24 hours under pump showed a production of 29 bbls. The Murray Valley Oil & Gas Co. is drilling a test on the Jacob Kimmett farm, Section 28, same township.

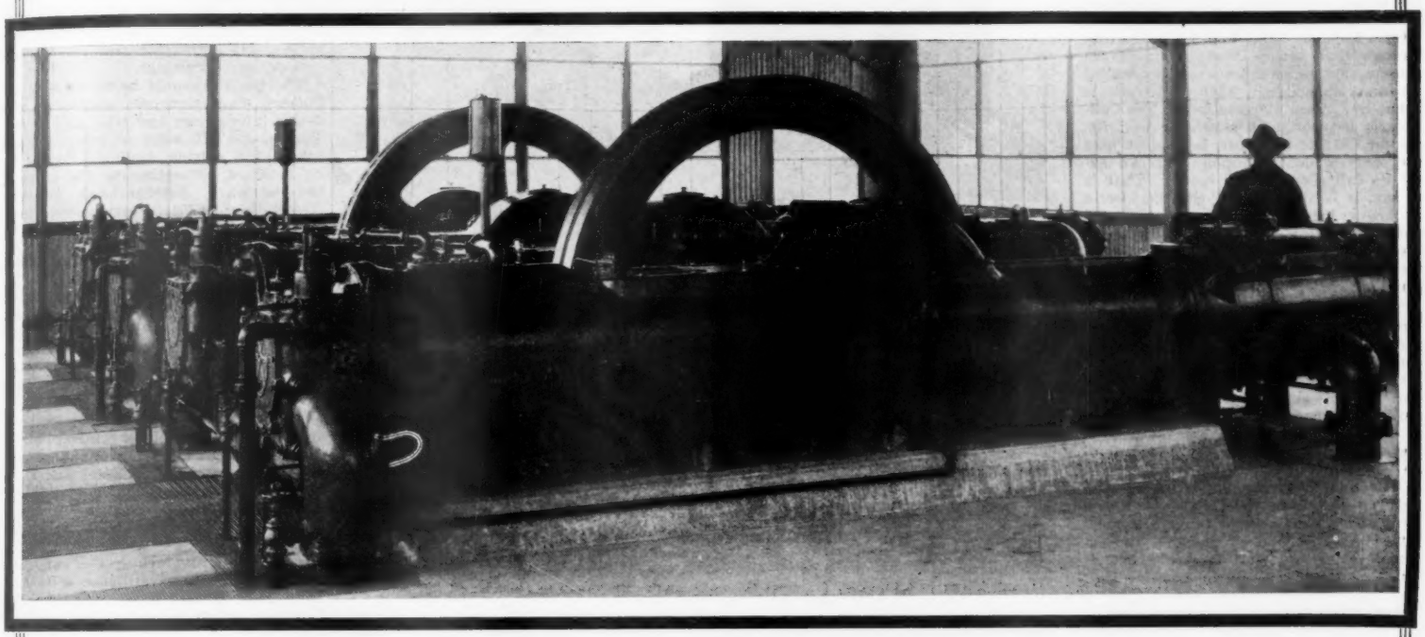
While few wells are under way in the old Lima Field, there is a revived interest in leasing acreage slightly in advance of production. At the same time much leasing where wells were drilled and produced for years, then abandoned, is being taken up, for the average oil operator figures that only a portion of the crude was taken from the Trenton sand which has a thickness of about 800 feet, and lower pays may be found in this thickness of sand. In deeper drilling in the Trenton sand the best results have been obtained on a wide strip running through the eastern portion of Hancock County, thence across Wood County near Bairdstown, Cygnet, Oil Center, Mermill, Mungen, Portage and west of Bowling Green, thence through Waterville to Monclova in Lucas County. This belt is known as the "Sucker-Rod" or "Hog's Back" territory where the Trenton is found considerably shallower than in other parts, and on each side of the belt heavy dips of the sand prevail. A short distance northwest from Bowling Green there is a dip of close to 400 feet within a distance not more than 600 feet.

Indiana

Four new completions were made in Indiana, all in the western part of the

(Continued on Page 162)

Watts-Miller meets varying load conditions—as no other Engine can—



A good engine, like a good watch, never varies in its action, regardless of conditions.

An engine may be entirely satisfactory so far as ordinary performance is concerned—yet without absolute speed control under all changing load conditions it is bound to fail to "deliver" when the real test comes.

—and it is an admitted fact throughout the oil country that Watts-Miller regulation never varies with sudden load changes.

This outstanding feature of Watts-Miller performance is due to the special exclusive features embodied in the governor making it the most advanced system of speed control known to oil men.

The Watts Differential High Speed, Ball Bearing Governor, patented and used exclusively on Watts-Miller engines.

Speed Regulation is entirely automatic, no dash pots or tension springs being used. "Racing" and "Hunting" common with ordinary governors when the load suddenly changes, is entirely eliminated.

Manual regulation and adjustments completely avoided, resulting in a steady, continuous flow of power.

The Miller Improved Gas Engine Co., Springfield, Ohio

Tulsa, Okla., Office
323 No. Cheyenne Ave.

Fort Worth, Texas, Office
318 Van Zandt Building

WATTS GAS ENGINES AND COMPRESSORS MILLER

EQUIPMENT AND SUPPLIES

OIL ELECTRIC ENGINES USED IN YARD WORK

The Donner Steel Co. has ordered an oil-electric locomotive for its plant in Buffalo, N. Y., and the American Rolling Mill Co. a 100-ton oil-electric locomotive for service at its plant in Middletown, Ohio. A few months ago the American Rolling Mill Co. bought a 60-ton oil-electric locomotive for yard work in its plant at Ashland, Ky., and the second order for a larger unit is the outcome.

The freight handling yard of a sizeable steel plant or rolling mill calls for continual movement. The locomotives must start, stop, and reverse at frequent intervals, and this imposes operating stresses that induce heavy maintenance charges, not to mention a very wasteful consumption of fuel when the work is done by steam locomotives. The oil-electric locomotive is especially well fitted for duty of this sort, because it uses fuel only when in motion, and can exert its full power at all speeds. That is to say, it is able to overcome the inertia of heavy loads in starting trains, and once in motion it can pick up speed rapidly. Furthermore, the oil-electric locomotive can run in either direction with equal efficiency and speed.

The primary source of power in these locomotives is one or more 300-bhp. Ingersoll-Rand oil engines—the 100-ton locomotive being equipped with two of these engines. The engines drive General Electric generators which furnish current to operate the four motor geared to the driving wheels. All the wheels are driving wheels, and every pound of an oil-electric locomotive's total weight is effective in giving the locomotive its grip on the rails. The two oil-electric locomotives for the steel companies mentioned are the joint products of the Ingersoll-Rand Co., the General Electric Co., and the American Locomotive Co.

MID-CONTINENT DISTRIBUTORS

Exclusive arrangements for Mid-Continent distribution of Emsco chrome-vanadium steel sprocket chain through the Continental Supply Co. were recently completed by Charles D. Wagner, vice president and sales manager of the Emsco Derrick & Equipment Co. The chain, in all sizes, will be stocked by all the 90 stores operated by Continental, and will thus be available without delay throughout the Mid-Continent and Gulf Coast territory.

Emsco chrome-vanadium chain material, the manufacturers state, is carefully selected for its heat treating and tempering qualities, as well as toughness. Bushings and rollers are machined from solid stock. Specially designed pins are another feature emphasized as accurately machined and driven into place. The original Emsco design upset locking pin holds the pin in place, instead of a cotter pin.

COMBUSTION COMPASS

An improved portable combustion test set has just been placed upon the market by The Hays Corp., of Michigan City, Ind. The idea has been to offer a simple and convenient case of instruments for service men, combustion engineers, oil burner dealers and others interested in the quick determination of combustion efficiency and the cause and location of boiler trouble.

OPENS OKLAHOMA CITY OFFICE

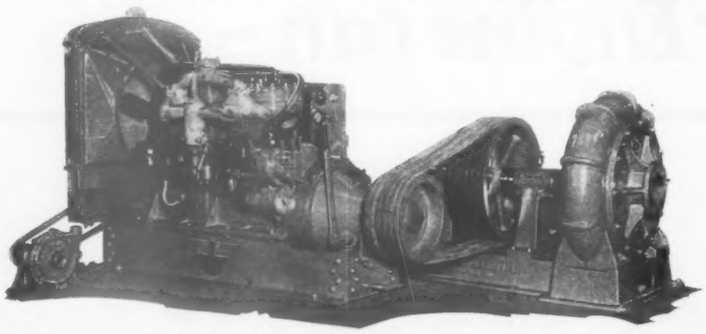
Continental Supply Co. has just opened a new office at 816 Petroleum Building, Oklahoma City, Okla., in charge of R. D. Mannix.

UNIQUE DRIVE FOR SAND PUMPS

The Climax Engineering Co. of Clinton, Iowa, offers a unique drive for sand pumps where it is not advisable to direct connect the engine to the pump. One installation uses Climax Model D4U, 6 by 7 inch, 85 horsepower engine, connected to a 6-inch sand pump with a special drive. This drive is taken from the engine by a twin disc inclosed clutch and through a Texrope drive which furnishes the necessary speed reductions between the engine and the pump, permitting the engine to operate at 950 r.p.m. and the pump at 625 r.p.m. Provision is also made for driving a service or priming pump from the front end of the engine.

In a recent test, it is reported, the capacity of the unit delivered much in excess of 1,000 gallons of clear water per minute, or more than 30 cubic yards of solids, to a maximum height of 60 feet.

The engine may be equipped with an electric starting and lighting outfit and operates from an ordinary drum by means of a vacuum tank and flexible tubing. The engine may be supplied with or without a radiator.



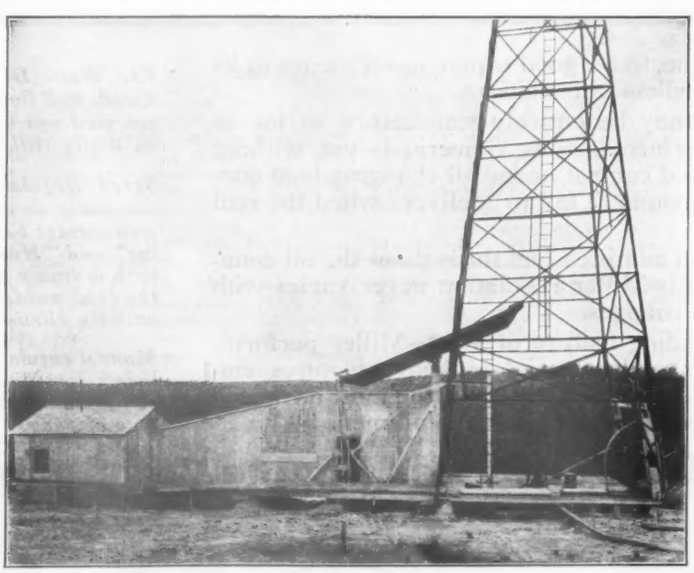
SECTIONAL BELT AND ENGINE HOUSES

Among the other new products developed by the International Derrick & Equipment Co. are their sectional belt and engine houses. These are light portable structures, made in standard sizes and are universally adaptable to all makes of steel or wooden rigs.

Adequately flashed, made with either galvanized or painted frames, these buildings with their long life, ready portability, ease of erection and their fire and rust-resisting qualities are offered as the solution of the building problem that every operator faces.

Special features of these sectional belt and engine houses are stated as follows: The 26 gauge galvanized sheeting is permanently fastened to sectional roof and sidewall panels, insuring a perfect fit and ease of erection. Corners, sidewall joints and eaves of roofs are constructed to make weather-tight connections eliminating extra flashings. Water shed of belt house drains away from front walk and derrick floor. A tight fitting adjustable panel is provided on the belt houses to permit installation or removal of sand reel which closes house when reel is in place or removed. A special panel to accommodate the crank is provided. This keeps this opening closed and permits the belt house to be erected or dismantled without interfering with the machinery support or machinery.

Through the use of various size panels the belt houses can be adjusted for use with belt centers from 34 to 42 feet. Eaves on the engine houses are 8 feet high. Openings are provided for doors and windows. The engine houses are offset 2 feet toward the back side of the rigs to provide a passage and working space between the wall and engine.



ACETYLENE AND CITY GAS

The relative value of acetylene and city gas as fuels for cutting iron and steel with oxygen is the subject of a booklet being distributed to interested engineers by the International Acetylene Association. This subject is considered both from the standpoints of theory and practice. In one comprehensive study by J. K. Mabbs of the Union Carbide Sales Co., New York, the laboratory aspects are discussed in detail. J. L. Anderson, National Carbide Co., New York, discusses the matter from the standpoint of the shop man, basing his conclusions upon the experience of a large number of concerns that have tried both acetylene and city gas as cutting fuels over appreciable periods of time on commercial cutting operations.

The booklet should be of value to engineers, plant managers and others who desire information and who may be considering the efficiency of one gas or the other as a cutting medium. Copies can be obtained by addressing the office of the secretary, International Acetylene Association, 30 East Forty-second Street, New York City.

BUYS MONARCH TRACTORS CORP.

The Allis-Chalmers Manufacturing Co., Milwaukee, Wis., announces the purchase of Monarch Tractors Corp. The business will be conducted in the name of Monarch Tractors Corp., subsidiary of Allis-Chalmers Manufacturing Co., Springfield, Ill. The manufacture of "Monarch" 6-ton and 10-ton tractors will be continued at the Springfield plant. Officers of the company are R. W. Gotshall, president; H. B. Baker, sales manager; and E. F. Norelius, chief engineer.

APPOINTED DISTRIBUTORS

The Standard Machine Co. announces the appointment of Hillman & Cooney, Inc., 2439 Hunter Street, Los Angeles, Calif., as distributors of Standard oil field products. The general offices will be removed to Torrance, Calif. Sales offices will be established at 2439 Hunter Street, Los Angeles.

INSTALL PIPE MACHINES

The Tulsa Pipe Supply Co., Inc., has completed the installation of modern pipe machines in its Tulsa yards, which are located in the East Tulsa industrial district.

TRADE LITERATURE RECEIVED

A "Study on the Economy of Using the Correct Bearing Metal for Each Particular Requirement" is the title of an informing booklet issued by the Eagle-Picher Lead Co. Microphotographs showing the effects of cooling on bearing metals are included.

"Oxy-Acetylene Tips" for March contains tables for laying out pipe templets and an article on reclaiming pipe lines.

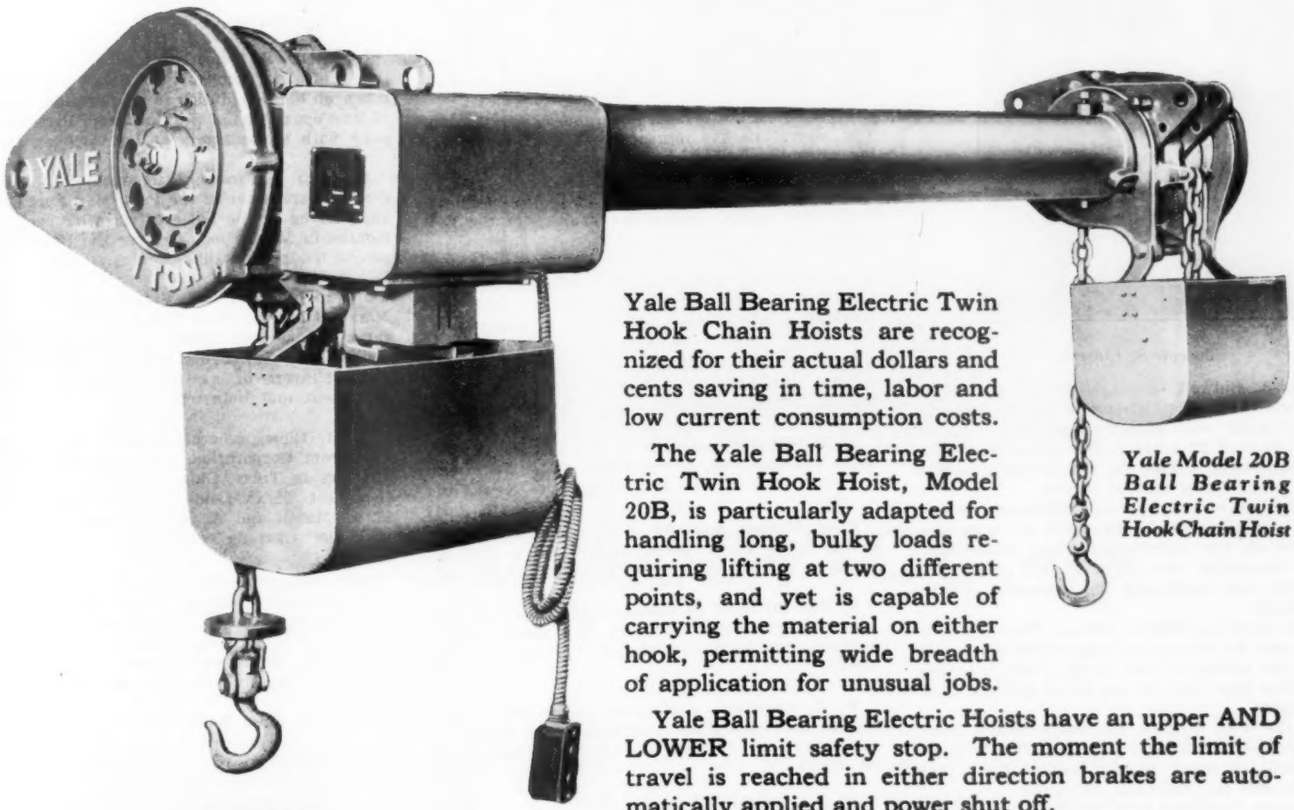
The Hill Clutch Machine & Foundry Co. of Cleveland, Ohio, has issued a cloth-bound catalog of over 250 pages on power transmission machinery. Hill Clutch mill equipment is very fully described and illustrated with photographs. A number of conversion and other tables add to the value of the book.

A "Message for the Operators of Kewanee Smokeless Boilers" is published by the Kewanee Boiler Corp. giving detailed directions for the care and operation of smokeless firebox boilers, the firing of smokeless boilers, and banking fires on down draft furnaces.

Oakite News Service, the magazine of Oakite Products, Inc., has several interesting articles on uses of these products in various lines.

TRADE **YALE** MARK

Yale Ball Bearing Electric Twin Hook Chain Hoist



Yale Model 20B Ball Bearing Electric Twin Hook Chain Hoist

Yale Ball Bearing Electric Twin Hook Chain Hoists are recognized for their actual dollars and cents saving in time, labor and low current consumption costs.

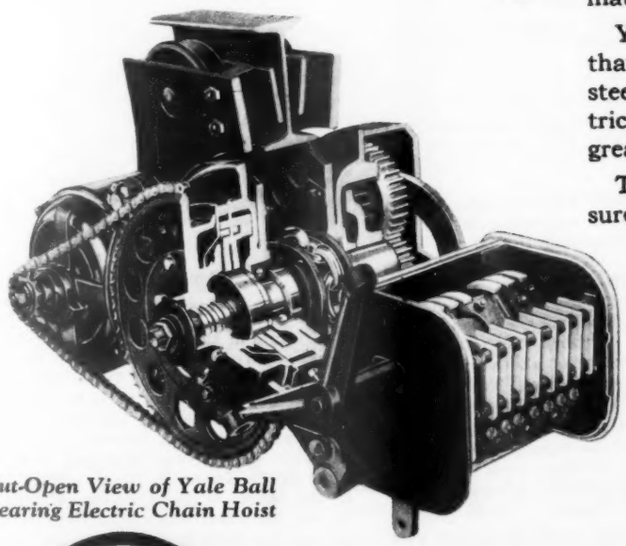
The Yale Ball Bearing Electric Twin Hook Hoist, Model 20B, is particularly adapted for handling long, bulky loads requiring lifting at two different points, and yet is capable of carrying the material on either hook, permitting wide breadth of application for unusual jobs.

Yale Ball Bearing Electric Hoists have an upper AND LOWER limit safety stop. The moment the limit of travel is reached in either direction brakes are automatically applied and power shut off.

Yale gives you complete steel suspension—everything that carries the load in the line of suspension is made of steel. All Yale chain is made of heat treated steel, electrically welded, forged and trimmed. It will stand a far greater shock and drop test than ordinary chain or cable.

The Yale Balanced Drive Planetary Transmission insures a remarkably high degree of efficiency, the inclination to side thrust being neutralized by the counteracting pressure due to the mesh of the intermediate gears with the internal gear.

All Yale's vast manufacturing facilities, experience and engineering skill constitute another reason for Yale's recognized chain hoist leadership.



Cut-Open View of Yale Ball Bearing Electric Chain Hoist

The Yale & Towne Mfg. Co.
Stamford, Conn., U. S. A.
Canadian Branch at St. Catharines, Ont.

YALE **Hoisting and Conveying Systems**

YALE MARKED IS YALE MADE

MEN KNOWN IN OILDOM

Joseph S. Sidwell

Joseph S. Sidwell, assistant superintendent of the Prairie Oil & Gas Company's land department, is exceptionally well known in petroleum circles, and has devoted 32 years to oil, including in that period experience gained in almost every section of the United States and in Mexico.

Mr. Sidwell recently gained additional prominence as a member of the Seminole advisory committee which has done considerable constructive work in regulating the output of this great Oklahoma field, and stabilizing the industrial position of petroleum.

He was born in Preston County, West Virginia, in 1870, and his oil career began in 1896 when he entered the service of the South Penn Oil Company. Since that time he has never left the ranks of petroleum.

From the West Virginia and Pennsylvania fields, he traveled westward and was identified with the development of many of the Central West pools before he left the Standard oil ranks.

He became identified with the Benedum & Trees interests, and was made president of the Transcontinental Oil Company. It was in this capacity that he gained his foreign experience, as the Transcontinental was extremely active in the Mexican oil fields for many years.

When the Mexican fields slowed up, Mr. Sidwell returned to the States, and resigned as president of the Transcontinental three years ago. Since that time he has been associated with the Prairie Oil & Gas Company.

PERSONAL PARAGRAPHS

Glenn L. Shepherd has left Bartlesville, Okla., for Casper, Wyo.

* * *

H. C. A. Holleman has moved from Sumatra to Balik Papan, Borneo.

* * *

Carroll V. Sidwell has returned from Tampico, Mexico, to Norman, Okla.

* * *

L. A. Snyder, managing director of Elbow Oils, Ltd., has returned to Calgary, Alberta, from England.

* * *

W. F. Connelly, president of the Mammoth Oil Company, journeyed from Casper, Wyo., to Tulsa last week.

* * *

Paul S. Ache, president of the Reiter-Foster Oil Company, is back in Tulsa after a business trip to New York.

Roy E. Dickerson has left Maracaibo, Venezuela, for a visit to Guatemala City, Guatemala.

* * *

F. M. Neall, of the Atlantic Refining Company, has gone to Hamburg, Germany.

* * *

C. B. Turner, Pittsburgh, Pa., general superintendent of the South Penn Oil Company, has returned from Mexico.

* * *

Charles H. Burke, commissioner of Indian Affairs of the Department of the Interior, spent a few days at Tulsa last week.

* * *

John J. Hill of the Carter Oil Company's gasoline department is reported en route to Tulsa after a visit to South American fields.

* * *

F. A. Leovy, first vice president of the Gulf Oil Company, has completed a tour of the Mid-Continent Field, and is back in Pittsburgh, Pa.

* * *

A. W. Jones, of Hauer and Jones, San Angelo, Tex., operators, has returned to his offices following a lengthy business trip to Fort Worth.

* * *

C. B. Kennedye, president of the Kennedye-Plumb Corporation of St. Louis, Mo., makers of the K-P drilling bit, is spending some time in Tulsa.

* * *

E. J. Bullock, vice president of the Standard Oil Company of Indiana, was in Tulsa last week. He returned to the Chicago offices on Thursday.

* * *

Charles L. Suhr, Oil City, Pa., vice president and general manager of the Pennzoil Oil Company, is basking in the salubrious climate of California.

* * *

H. F. Sinclair, president of the Sinclair Consolidated Oil Company, was a Tulsa visitor last week, traveling from Mexico and en route to New York.

* * *

P. M. Miskell, manager of the refining and marketing departments of the Empire Oil & Refining Company, Tulsa, left Saturday for New York City.

* * *

F. Ray McGrew, president of the Standard Pipe Line Company, of Shreveport, La., made a short business trip to Baton Rouge, La., early in the week.

* * *

W. T. Crawford, well-known independent operator, of Shreveport, La., was sent to the hospital a day or two ago for treatment for an attack of appendicitis.

* * *

Harry L. Nolan, sales manager of the Continental Supply Company, with headquarters at St. Louis, Mo., is spending three weeks in the Oklahoma territory.

* * *

W. B. Hassett, president of the Kettle Creek Refining Company and the San Angelo Refining Company, has returned to Tulsa after a trip over the West Texas fields.

* * *

L. W. Young, Pittsburgh, Pa., president of the South Penn Oil Company, is sojourning in California and incidentally looking over the oil fields of the Pacific Coast.

* * *

D. B. Harris, division superintendent for the Humble Oil & Refining Company in the North Louisiana and Arkansas territory, has returned to Shreveport from a conference of all the company's division superintendents at Houston, Tex.

* * *

C. H. Wright, president, and R. F. Mason, head of the land department of the Sunray Oil Company, Tulsa, Okla., have gone to New York to attend the directors meeting of the Sunray Oil Corporation.

* * *

Clarence Reed, for many years identified with rotary tool manufacturing in the Mid-Continent and Gulf Coast Fields, spent a few days in Tulsa last week, and has returned to his home at Wichita, Kans.

* * *

Charles P. Brandt, old-time Trenton Rock operator, of Indianapolis, Ind., who has for the past two years been operating in the Saginaw, Michigan, Field, is getting ready for development work in the Muskegon Field.

J. M. Patterson, of the Pure Oil Company, has returned to Tulsa from Texas.

* * *

M. M. Miles has resigned as secretary and treasurer of the Midway Northern Oil Company and will engage in the mining and oil land leasing business after a short rest.

* * *

Olen Lane, who is in charge of the Marland Oil Company's land operations in California, was elected vice president of the Marland Oil Company of California at the fifth annual meeting.

* * *

Col. W. S. Key, Oklahoma operator, is in the West Texas fields with the view of opening operations in that area. He is being accompanied on the inspection tour by Virgil L. Brown of the Key-Okla Oil Company.

* * *

L. B. O'Neil, formerly president of the Internation Refining Company at Sunburst, Mont., has taken up his new duties as vice president in charge of land operations of the California Petroleum Company with headquarters at Los Angeles, Calif.

* * *

Frank J. Huffman, Pittsburgh, Pa., vice president and treasurer of the Penn Mex Fuel Company, has arrived at the home office after spending two months in Mexico looking over the Penn Mex company's holdings in that country.

* * *

Mr. and Mrs. D. K. Swartwout, Sr., sailed on March 3 for the West Indies where they will vacation for several weeks. Mr. Swartwout is president of The Swartwout Company, Cleveland, Ohio, manufacturers of steam specialties, ventilating equipment and industrial ovens.

* * *

A. M. Blow, general manager of the Amerada Petroleum Corporation, has returned to his headquarters in Tulsa, Okla., following a trip through the West Texas fields. He was accompanied by H. E. Marsh and A. R. Dennison, both connected with the Amerada corporation.

* * *

C. H. Wegeman, chief geologist of the Pan American Petroleum Company, returned from New York to the Pacific Coast by airplane in time for the meeting of the American Association of Petroleum Geologists. Stops were made at Columbus, Ohio, St. Louis, Mo., and Houston and Brownsville, Tex.

* * *

Mr. and Mrs. William Livingston, of Calgary, Alberta, have returned from a trip around the world. Leaving in October last, they visited China, Ceylon and Europe, spending some time in France. Mr. Livingston is one of the pioneer operators in the Alberta fields, having founded the Southern Alberta Oil Company in 1914.

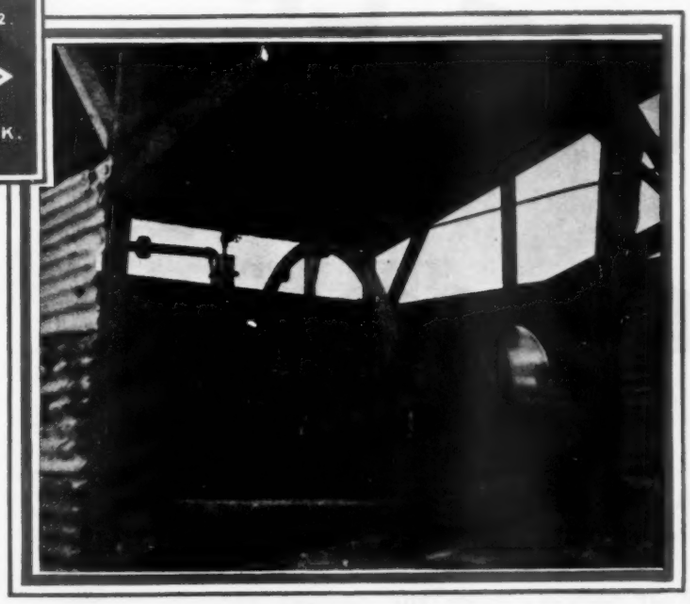
* * *

Dr. C. B. Forward, of Urbana, Ill., inventor of the Forward process of refining crude oil by the use of superheated steam in the stills instead of direct application of fire in the primary heating units, was in Shreveport, La., for a day or two recently visiting old acquaintances in the industry. In the early days of the Gulf Coast fields, Doctor Forward was a successful operator in that territory.

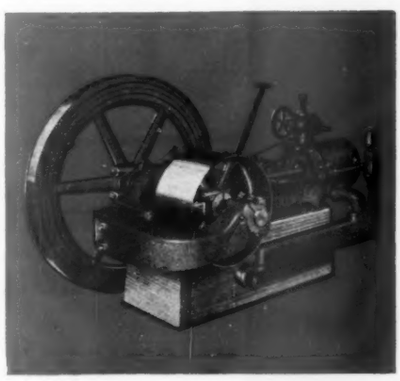
* * *

John H. Markham, Jr., of Tulsa, Okla., one of the best known individual oil producers in the United States, was elected a member of the board of directors of the Sinclair Consolidated Oil Corporation on Wednesday, March 14. He succeeds the late James J. McGraw of Tulsa. Mr. Markham has been in the oil business since his boyhood. He began as a tool dresser for his father, John H. Markham, Sr., in the Kane, Pennsylvania, Field; became a driller, then a contractor and later an oil producer in the Kansas and northern Oklahoma fields. In the height of the Cushing excitement in 1915-16, Mr. Markham was one of the largest producers in that big field and sold out his interests there to the Carter Oil Company for a sum running into the millions. He continued to operate in Kansas, Oklahoma and Texas with great success. In addition to his individual oil holdings he is prominent among Mid-Continent bankers and is well and favorably known in Eastern financial circles. Mr. Markham was one of the first men chosen on the Petroleum War Service Committee when the United States entered the European war and he served throughout with distinction.

"OILWELL"
ESTD. 1862
TRADE MARK.
(REGISTERED)



Real Service



"OILWELL" *Drilling Engine with Outboard Bearing*

This "OILWELL" Drilling Engine was purchased by the London and Pacific Petroleum Co., Ltd. in October, 1908, and has been in continuous use in Peru, South America ever since, the above photograph being taken by our representative on a recent trip to that country.

20 years of Reliable, Continuous Service amply demonstrate the REAL SERVICE which can always be counted upon from "OILWELL" Quality Equipment.

Such Quality and Service should always be an important factor in the choice of the careful purchaser of oil field equipment.

Branch Stores in all Oil Fields

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON
WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

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Incidentally, have you seen the Linde magazine—"Oxy-acetylene Tips?" We'll be glad to send you a copy. It's part of Linde Process Service.

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THE LINDE AIR PRODUCTS CO.

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General Offices:

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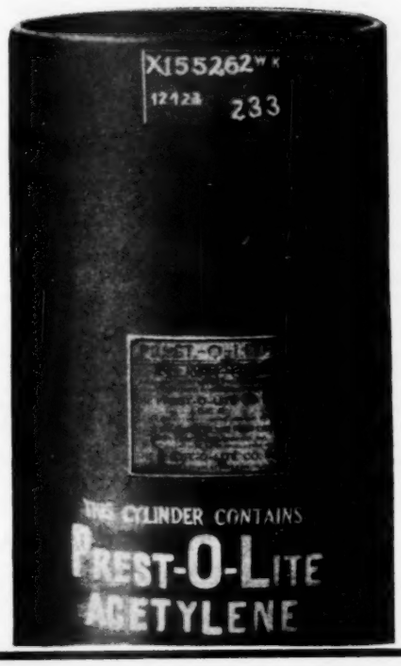
Eventually you'll standardize on Prest-O-Lite DISSOLVED ACETYLENE



Because one of the 139 Prest-O-Lite distributing points is near you.

Because over a period of 23 years this service has proved its reliability and economy.

THE PREST-O-LITE COMPANY, INC.
Unit of Union Carbide and Carbon Corporation

UCC

General Offices: Carbide and Carbon Building, 30 East 42d St., New York
37 Plants—102 Warehouses

Natural Gas Developments

Forward Pays Tribute to Financial Daring of Natural Gas Men

The gas division of the Oklahoma Utilities Association held two interesting sessions in the course of the three days' convention of the association in Tulsa March 13, 14 and 15.

R. W. Hendee, general field superintendent of the Oklahoma Natural Gas Corp. presided at both sessions.

Papers were read on "Industrial Heating" by John S. Zink, Tulsa, Oklahoma Natural Gas Corp.; "Recent Deve'opments in Natural Gas Distribution" by C. W. Robbins, Ponca City, general gas superintendent, Oklahoma Northern Utilities Co.; "Blue Star Home Plan" by A. E. Higgins, New York, field representative of the American Gas Association; "Gas Refrigeration" by Logan Cary, Oklahoma City, Oklahoma Gas & Electric Co.; "The Co-operative Work Between the Gas Associations and the Bureau of Mines," by E. L. Rawlins, Bartlesvi'le, United States Bureau of Mines; "A. G. A. Accounting Section," by E. H. Poe, Tulsa, southwestern division manager, Central States Power & Light Corp.

Alexander Forward, who spoke on Utilities and the Associations" in Thursday's general meeting in the Crystal ballroom, was introduced to the gas men at the group session on Wednesday and made a short address in the course of which he said that in joining forces with the American Gas Association the Natural Gas Association of America had greatly strengthened the organization and that the financial daring of the natural gas man, necessary in pioneering for new gas areas, in developing the fie'ds and transporting the product long distances, was a stimulating influence to the manufactured gas man whose problems did not include such hazards.

At the conclusion of the papers on both days there was a short open forum in which questions and answers relating to gas problems were exchanged.

SEMIANNUAL RECHECK ON MONROE GAS FIELD

SHREVEPORT, La., Mar. 17.—The semiannual recheck of the Monroe gas field, as of March 1, 1928, has just been completed and the results published by the Minerals Division of the Louisiana Department of Conservation, with the addition of the first such check of the Richland Parish gas field. A'so, the department has published figures on the total gas production of the State during 1927.

With respect to the Monroe Field the department was not, at this time, able to give a general summary of the results of the recheck as showing a decrease in pressures of the area as a whole, since the field is divided into eight zones in each of which different factors govern. In some of these zones there has not been as much development as in others, the degree of porosity of the sands differs, some wells have not been pul'ed as hard as others, etc. But when all these are assembled and conclusions drawn, it is expected that a slight decrease in pressures will be noted. Pressures and volume in the Richland Field shown in the survey do not d'ffer from what they were when the several wells were gauged at or soon after completion.

The recheck shows a total of 514 wells in the Monroe Field capable of producing and 426 actually being pulled, with a total open flow of 3,470,689,000 feet. Total production during 1927 was 132,895,666,000 feet, of which 66 per cent, a conservative estimate, was consumed in the manufacture of carbon b'ack. This figure will probably hold good for 1928, as there has been no ruling further limiting consumption of gas for this purpose since last year and none appears on the horizon at present. And in the event an order reducing such consumption were issued it probably would have little, if any, effect on total consumption as pipelines now pul'ing on the f.eld and at least two more projected would offset and probably exceed the enforced reduction.

The Richland Parish Field is credited with 33 wells having a total open flow of 1,153,011,000 feet and a total production of 1,837,403,000 feet from the six wells being pul'ed.

Total gas production in Louisiana in 1927 is given by the department as 181,152,402,000 feet, divided: Bossier, 10,356,045,000; Caddo, 15,856,320,000; Morehouse, 37,723,842,000; Ouachita, 90,352,053,000; Red River, 362,540,000; Sabine, 30,931,000; Union, 4,819,770,844; Winn, 3,205,000; Webster, 17,983,335,000; Terrebonne, 7,141,000.

SHORT METER COURSE

The southwestern gas meter short course at Norman, Okla., sponsored by the University of Oklahoma, the Oklahoma Utilities Association and the Oklahoma Corporation Commission, will be he'd April 24, 25 and 26. This year the course will be broadened and while stress will be placed upon measurement and regulation, there will be sufficient attention paid to the technical problems. An improvement has been made by dividing one day into two elementary and advanced divisions so the two types of men can get what they want and what their employers want them to get without having to sit through part of the session in which they are not concerned.

ALL-GAS APARTMENTS ERECTED IN NEW YORK

The first all-gas apartment house in the New York area, and possibly in the country, provides gas, heat, hot water, refrigeration and cooking service within the range of the average income, according to Walter D. Smith, of the Consolidated Gas Co. of New York. The house is in Bayside, L. I.

From the standpoint of the gas utility company, the connected load from an all-gas apartment is very desirable. The gas-heating load is practically continuous throughout the day with a decrease in the demand at night. The gas-refrigeration load is a 24-hour one, and, coming from a large number of refrigerators, is an apprec.able amount. Probably the most important use of the new apartment to public utilities companies is that it will serve as a means whereby records of service and performance may be compiled. From the records it will be possible to make accurate comparison with data compiled on operations under opposite circumstances. This will enable the new business departments of gas utilities to submit facts instead of theoretical estimate regarding the use of gas for heating purposes.

The building is two stories high, each of its twelve apartments consisting of four rooms and bath. Each kitchen is equipped with a combination gas range and refrigerator, and latest kitchen equipment development, and heat for the bui ding, as well as hot water supply, is furnished by gas equipment in the basement. All gas bills are paid by the landlord, the charges being included in the rent.

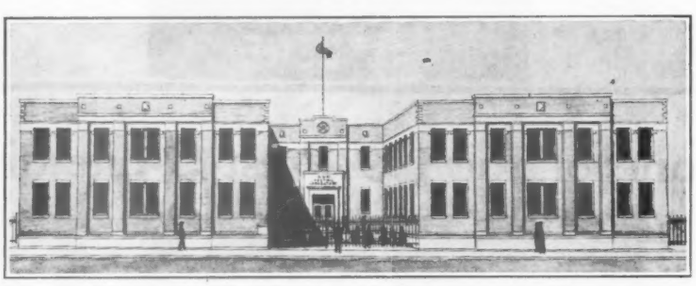
The planning of the apartment house presented an opportunity to demonstrate the efficiency and flexibility of gas fuel, not on'y for cooking and water heating, but also for provid.ng the entire supply of heat as well as refrigeration service for the house, Mr. Smith says.

"It offered the chance to disprove the conception that the installation and operation of gas equipment is prohibitive," he says.

"As it stands, this apartment house is as near to self-sufficiency and independence in operation as can be contrived. Ice and coal delivery have been eliminated and janitor requirements reduced to a minimum. In an apartment house with a constant temperature guaranteed, the tenant can dismiss the heating problem from his mind for good. Aside from simple comfort, this constant temperature is a health safeguard, and the attendant freedom from dust, smoke and ashes is of great importance in the care of growing children.

"The combined gas range and refrigerator not only makes for compactness and convenience, but perfect refrigeration means elimination of much food waste. The quietness of operation of the gas refrigerator is a great attraction, particularly in apartment houses."

NEW HOME OF GAS TESTING LABORATORY



New American Gas Association testing laboratory at Cleveland, Ohio.

The appliance testing activities now being carried on in the present building in Cleveland occupied by the American Gas Association Testing Laboratory will soon be conducted in the new permanent home of the laboratory, on East Sixty-second Street, about 200 feet from the present site. The new building will be erected on land now belonging to the East Ohio Gas Co., which generously donated the present building and a great deal of equipment through the interest of R. W. Gallagher, president of the East Ohio Gas Co. and chairman of the laboratory managing committee.

The laboratory's new home will cost approximately $150,000. The laboratory will incorporate the ideas of the best engineers and architects in the country. The outside dimensions of the new building are 101 feet by 130 feet, the gross floor space being 26,600 square feet.

The necessity for a new laboratory was brought out in the report of a special committee appointed by the executive board. The board decided that since the testing laboratory had already demonstrated its value to the industry, it was imperative to erect a new building. The splendid support given the laboratory by gas companies and manufacturers has resulted in a tremendous growth of activity. At present several of the testing departments are badly crowded.

In addition to conducting approval tests on four major types of gas appliances, the laboratory is completing investigations necessary in the preparation of new requirements and the revision of old ones, and is also conducting exhaustive researches on the mixing of various kinds of gases.

Provision has been made in the new building to allow for almost unlimited expansion.

As of December 31, 1927, the laboratory had approved, either from inspection or test, 7,198 models of gas appliances. It is estimated that there are probably more than 40,000 additional models of gas appliances yet to be tested.

The committee which recommended that a new laboratory be built consisted of James Lawrence, chairman; R. W. Gallagher, O. H. Fogg, W. C. Beckjord, R. R. Young, J. S. DeHart, Jr., R. E. McGowen, and H. M. Brundage.

NATURAL GAS SUPPLY FOR GEORGIA PLANNED

Natural gas piped from the oil fields in the central and western states will be piped into a number of sections of Georgia within 12 months, according to an announcement by Chairman James A. Perry, of the Georgia Public Service commission.

Commissioner Perry said the natural gas will eventually be available in the rural districts. The chairman stated he is not at liberty to reveal the names of the interests promoting the enterprise but declared most of the options required for the gas line right of way have been secured. He said the pipes coming directly into Georgia wi'l cross the northern Alabama-Georgia line.

PASADENA ASKS RATE CUT

Another plea for an order abolishing the differential in gas rates between Los Angeles and Pasadena was made by Deputy City Attorney Diether of Pasadena at the gas-rate hearing before the State Railroad Commission.

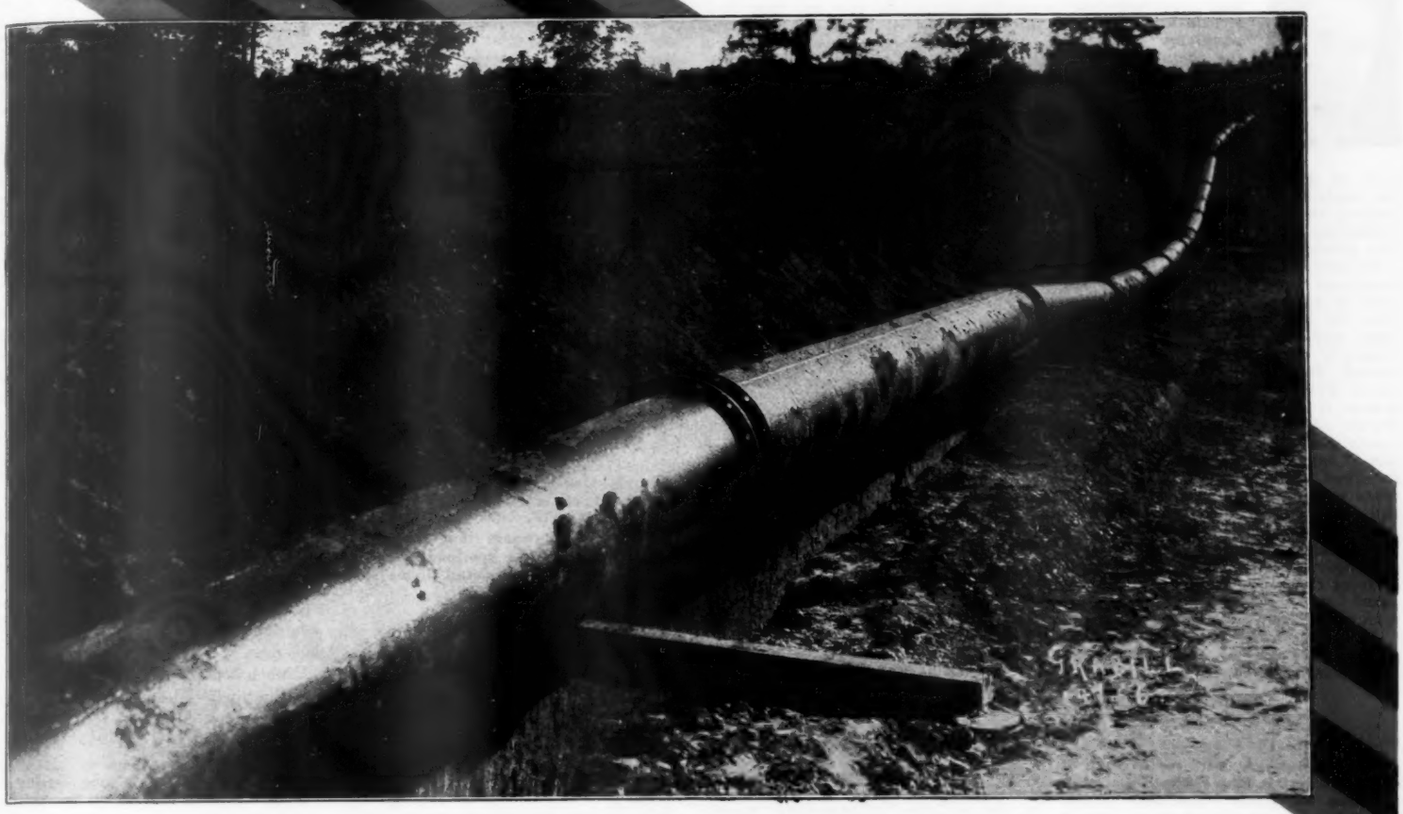
Mr. Diether declared the differential was established 10 years ago on the ground that Pasadena was less densely populated than Los Ange'es and hence distribution costs were higher. This condition, he argued, does not exist today and therefore there is no basis for the basic rate being 6 cents higher in Pasadena.

Charles Grunsky, gas and electric engineer for the commission, said one flat rate for the entire metropolitan area in and surrounding Los Angeles is desirable.

TO CONTROL WILD GASSER

AUSTIN, Tex., Mar. 17.—A committee of San Patricio County citizens protested to the Railroad Commission of wastage of gas from the White Point gas well, which has been running wild. The commission promised to send its experts to assist in closing the well and ending the loss of gas. This is the well Tex Thornton recently shot twice and then it reignited. Since then it has alternately burned and been out. Exhaustion of the gas field is threatened by this wild gasser, the commission was told. With an original pressure of 927 feet the field pressure is now below 600 feet, the commission was advised, the drop being due to the large wastage.

More Miles of Smithsteel Gas Line Pipe Ahead of Laying Crews



Capacity Increased to 6 *to* 8 Miles Per Day —16 to 24 inch

SMITHSTEEL GAS LINE PIPE

A. O. SMITH CORPORATION

Oil & Gas Field Products Division

General Offices—Milwaukee, Wis.

District Offices at New York, Pittsburgh, Tulsa, Houston, Los Angeles

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

KINDS OF STRESSES

An article dealing with the strength of certain materials that I have been reading uses the terms "transverse stress" and "shearing stress." I don't think I understand the exact meaning of these terms and I have nothing at hand here where I am working to explain them. May I ask you to make them clear?—T. R. W.

Your question probably can be answered very well by quoting from Kent's Engineers' Pocket Book: "Stresses are of different kinds, viz., tensile, compressive, transverse, torsional and shearing stresses. A tensile stress, or pull, is a force tending to elongate a piece. A compressive stress, or push, is a force tending to shorten it. A transverse stress tends to bend it. A torsional stress tends to twist it. A shearing stress tends to force one part of it to slide over the adjacent part. Tensile, compressive and shearing stresses are called simple stresses. Transverse stress is compounded of tensile and compressive stresses, and torsional of tensile and shearing stresses.

TO FREE WATER-JACKET OF LIME

Can you advise me of any compound that will loosen and remove the lime that forms in the water-jacket of a gas engine?—J. H. B.

This lime can be removed by use of a mixture of muriatic acid and water in equal parts. The mixture should be circulated while the engine is warm, and care should be taken to see that exactly equal parts of the acid and water are employed. A simple method of remedying the difficulty is offered by compounds prepared especially for the purpose by chemical manufacturing companies whose advertisements appears in The Oil and Gas Journal.

GAS AS EVIDENCE OF THE PRESENCE OF OIL

There is a question that has been puzzling me a long time and that is, is it possible to tell when you strike gas in drilling whether you are going to drill into oil by going deeper? If not by drilling deeper can you tell in what direction to go to drill another well so that you will get oil? Of course I understand that gas is reported in lots of wells while they are being drilled and then abandoned because they didn't get oil. Is this because they were not drilled deep enough? Is there anything in the gas that might give some information on this? If there isn't any way of telling by the gas, what is the reason? I can't understand why there shouldn't be oil if you find gas.—R. T. Y.

It would be out of the question to give all the details connected with your inquiry as a book could well be written on the subject. Briefly, it would be impossible to tell in every instance when gas is encountered whether oil is either present in an underlying stratum or at some distance from the well being drilled and in which the gas was found, either in the same sand or in some other sand. There are times when the presence of gas in a formation gives reasonable assurance that oil is present in an underlying stratum, or may be found in the vicinity of the well.

To anyone being called upon to give a decision as to the possibility of oil based on the occurrence of gas in a formation, the answer is usually arrived at by considering a number of factors. He would consider the nature and character of the gas, locality where found, relative age of the formation and structural features and whether the gas occurred in an oil country.

Considering the various factors in order, how would the nature and character of the gas affect his decision? Assume that the gas consisted of approximately 98 per cent methane, some nitrogen and possibly other inert gases, but no other hydrocarbons. Without further data, the gas would be classified as a marsh gas therefore of no significance as to the occurrence of oil.

Assume that the gas were largely carbon dioxide. One structure drilled in Utah contained carbon dioxide in a certain sand in excess of 98 per cent. Deeper drilling resulted in a dry well. Last year a well was completed in northeastern Colorado and a noncombustible gas was found with the oil. On analysis, the gas proved to be largely carbon dioxide. About two years ago a well was being drilled in British Columbia just across the line and near the Frazer River. At a depth of somewhere between 700 and 1,200 feet, gas was encountered in a loose sand below an unconsolidated shale of very recent age. The same type of shale occurred below. One would hardly expect the gas to be other than a marsh gas, yet upon analysis, other hydrocarbons in addition to the methane were present in the gas. In an oil country, the occurrence of such a gas would suggest the possibility of oil.

Taking up the second factor, namely locality where found, let us refer back to the last example just cited. That part of British Columbia would suggest a long gamble in drilling for oil with the hope of finding it. Very few companies would investigate a report of gas in that locality.

Relative age of the formation and structural features would play an important part in the final decision rendered. If the formation in which the gas was discovered could be identified, irrespective of locality, another link in the chain of evidence would be added. A knowledge of the country would suggest the geologic column and therefore the possible presence or absence of formations that might prove productive. The degree of knowledge concerning this phase would determine its relative importance in arriving at the final answer. An intimate knowledge of structural features both surface, and subsurface if possible, would be of great assistance in not only analyzing possible occurrence of oil in formations immediately below but it might furnish a clue as to the direction of migration of the gas possibly from some near-by structure, which might thus be considered as favorable for drilling. As an illustration the gas showing in British Colombia might again be cited along with many others. Proximity to hard rock formations mitigated against the possibility of the occurrence of oil. On the other hand, if an anticline in sedimentary formations occurred the same distance away, a more detailed investigation would be made. In certain localities in California, the Mid-Continent area, Texas, and Rocky Mountain district such a showing would immediately call for an investigation not only as regards that particular well location but also of the surrounding country. This example would also illustrate the last factor, namely whether the gas occurred in an oil country.

You will appreciate that the subject is too broad and has too many ramifications to be treated in detail in the space available here.

CONCERNING KEY WELLS

We are contemplating some repressuring work on one of our properties and I would like to know the type of well that should be chosen for key wells; also how much gas should be pumped into a key well?—S. C. T.

In most of the repressuring work to date, it has been customary to utilize those wells which will take the gas most readily. The reason for doing this was to avoid using excessively high pressures. Assuming that many of the wells which do not readily take the injection gas are located in tight-sand areas, it would seem logical to use these wells as injection or key wells and thus drive the oil from the tight sand out into the looser sand, where it could be recovered.

Obviously, wells which would not take gas or air readily would also be poor producers. For further information on this subject, it is suggested that you get in touch with R. Van A. Mills at the Bureau of Mines station, Bartlesville, Okla., as he is carrying on an extensive investigation dealing with this subject. As regards the volume of gas to be injected into a key well, the amount varies. Volumes from 10,000 to 40,000 cubic feet per day have been most generally used.

VALUE OF WATER SAMPLES

In what way are water samples valuable? Scouts and engineers will come around and ask for water samples and claim they can tell where the water is coming from. How can they tell this?—V. C. N.

Water found in a producing horizon, and often in formation above the producing sands, contains salt water. By salt is meant not only the salt we usually speak of, but also other salts. The amounts of these salts in the different waters are not as a rule the same. Thus by comparing the amount of one salt found in one water with the amount of the same salt found in another water, it is often possible to determine where the water is coming from.

RECONDITIONING BURIED PIPE

In the case of a pipe line already underground, but showing evidence of corrosion, is there anything that can be done to check the corrosion that is believed to have started? Would it be wise or foolish from an economic standpoint to unearth the pipe and subject it to some sort of anticorrosion treatment? Could this be done without interruption of service? I have been told that this has been done by some large company, but do not know whether it is true. If the thing can be done with ultimate economy, what sort of treatment should the pipe receive? Just paint? What would be the procedure in detail, if you can tell me?—G. H. M.

Yes. The pipe can be uncovered, raised, cleaned, covered with some protective coating, lowered back into the ditch and recovered. Moreover, this is done without unscrewing, uncoupling or otherwise taking the line apart and with the line still filled with gas or liquid it carries and, in some cases, without even shutting down the pumping operation during this work.

Deep pit holes are often filled by welding. There has been hardly enough of this sort of thing done long enough ago to give much data on just how long these coatings will resist the action of soils and moisture on pipe, but it is evident that if the coatings will stand up and protect as is generally believed, it is economy to do this.

Much depends on how well the surface of the pipe is cleaned, in the opinion of most of those who have made a study of this problem. To get the pipe fairly clean by hand is expensive. About two and a half years ago a pipe cleaning machine was developed which has been and is being used very generally where pipe lines are dug up and raised for cleaning and reconditioning.

Opinion on the proper method of cleaning and of painting or protecting with coatings differs considerably as would be natural because of the lack of experience because of the reasons stated. The concensus of thought, however, is that the pipe should be well cleaned and dry, all dirt, scale and foreign matter removed. The number of kinds of paints and coatings is legion. Industry has had considerable experience in such protection of metal exposed to the atmosphere as structural steel of bridges, etc., but not so much on buried pipe. Some favor asphaltic materials, some coal tar materials and others some other coating. In most cases, a primer coat of paint is applied hot, usually by pouring the "hot stuff" onto the top of the pipe and as it runs around the sides, spreading it on the bottom and sides by a fabric "canvas" passed under the pipe and operated by men on each side of the line.

Primer coats are usually like ordinary paint as to thickness of film (a few thousandths of an inch) but the second coats are often much thicker, possibly a sixteenth to an eighth of an inch thick.

Paper, usually of an asbestos felt nature, is also often used in conjunction with asphaltic or coal tar paints or coatings. In soil which is very corrosive to the pipe, a primer coat, coat of "hot stuff," a wrapping of paper and another "sealing" coat of the "hot stuff" is usually applied and this same procedure may be considered economy for a line in average soil, especially if it is a good sized line of considerable cost.

p-423-XL

Waukesha Oil Field Power Units at Raccoon Bend, Hempstead, Texas

Many Purpose Power Plants

For Wildcat drilling you will find no more reliable power than these Waukesha Oil Field Power Units. They may be used interchangeably for driving the slush pump or the rotary head and the draw works. They run on waste gas or gasoline, and are particularly adapted to country where water is scarce, because they use so little.

As shown above they are down 2200 feet with a 1200-foot Portable Rig, but Waukesha "Ricardo Head" Engines are easily able to take care of over-loads like this. Waukesha Oil Field Power Units are built in various sizes up to 125 H. P. to meet all oil field production requirements with the most economical size. They are readily portable and do not require elaborate foundations or enclosing buildings for mounting or protection.

P-823-XL

OIL INDUSTRY EQUIPMENT DIVISION

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McCord Radiator & Mfg. Co.
DETROIT

KENTUCKY-TENNESSEE

(Continued from Page 60)

James C. Ellis, the local operator, is still maintaining his active development and has already drilled around 50 wells in the field since he started his first well on the famous J. R. Weller farm, in the heart of the Ambrose Pool. He gets a dry one once in a while but has been very successful in getting a nice large daily production. His second well on the Cody Hoover farm, is said to show for 50 bbls., as does No. 4, while another is reported a dry hole.

West of Buford, near the McLean County line, Jordon, Short and others' No. 3, on the Gilbert Jolly farm, is a 50-bbl. producer.

In the Colyer Pool, S. H. Russell and others' No. 3, on the Latney Rhodes 13 acres, was cased with a string of 413 feet, found sand from 413-32 feet and went to a total depth of 462 feet, shooting with 60 quarts, resulting in a 30-bbl. producer.

Medley Brothers' test on the Eliza Jewell 90 acres, on the east side of the farm, in the Ambrose Pool, came in a dry hole, and the drilling outfit has been moved to the west line of the farm, where No. 2 is starting.

The Ohio Oil Co.'s second well on the Iva Rhodes farm has been drilled to a total depth of 409 feet and given a 40-quart shot, but results are not yet known. In this well a string of 369 feet of casing was set; sand found from 396-405 feet and drilled to a total depth of 409 feet.

G. H. Rice and others' No. 1 J. A. Bellamay farm produced 20 bbls. the first 24 hours. W. H. Ford's second test on the Holbrook-Wells farm was dry at 793 feet. J. M. Meredith has one of the same kind in No. 1 on the Vic Haynes farm, at 550 feet.

Creek Drilling Co. is drilling Nos. 9 and 10 on the Bartlett heirs' farm, in the Ambrose Pool, and is drilling No. 1 on the Emma Ford farm, near the same pool.

Daviess County

An offset to the big initial well drilled on the Hayden farm, in Daviess County, has been drilled by the Weideman Oil Co., of Cleveland, Ohio, on the C. M. Field farm, near Utica, and is estimated to be a 200-bbl. producer at the start, showing as good as the initial well on the Hayden lease.

L. C. Young and others' No. 3, on the W. G. Hayden farm, upon which the discovery well of the Hayden Pool has been drilled in and reported around 150 bbls. initially.

Conrad Kipp and others' second well, 1,000 feet from the south line and 700 feet from the west line of the Mattingley heirs' 100 acres, is reported at 25 bbls., and Nos. 3, 4 and 5 are under way.

Barren County

A number of wells in the Lecta Pool extension of the Glasgow Field, in Barren County, are in the sand and are showing for wells far above the average for that county. Several have been estimated around 100 bbls., from a sand around 400 feet, meaning that production in this county is on the upward turn and the pool looks like the most productive yet opened in the county. The next report will show the worth of these new developments.

Warren County

One completion is reported from the Bowling Green Field in Warren County, which is W. Wareham's No. 3 on the Lawrence B. and Margaret Graham farm, 3½ miles north of Bowling Green. It is good for 6 bbls. at 992 feet.

Vickers and others are drilling on the Bales lease, in the southern part of Daviess County. A slight showing of oil was found in 15 feet of sand on the Baird farm, in the same county, along the Hartford Road, about 10 miles from Owensboro.

Miller & Damron, drilling on the Mayor J. R. Beck farm, northwest of the Hayden lease, in Daviess County, found the Jett sand dry and is drilling for the deeper Barlow sand.

A. LaCroix, trustee for parties from Lancaster, Ohio, interests, operating on a block of 400 acres west of West Louisville, near Curdsville, in the western part of Daviess County, is going along nicely. The drilling is being done by H. A. Henry on the Dick Murphy farm, and is a pure wildcat which will be closely watched, although large blocks of territory have been leased in that area. The producers, if any are found, will be at a greater depth than in the present producing areas of Daviess and Ohio Counties.

Miller and Damron, known as the Creek Drilling Co., now have 86 producing wells in what is known as the Tri-County Field of Ohio and Daviess Counties. This firm has nine strings of tools running in the field.

S. E. Bryant and T. H. Ballentine, drilling on the Sam Houston farm, in McLean County, north of Calhoun, are due to drill in their test any time as the latest report is a depth of 1,410 feet had been reached.

Work on the pipe line being constructed by James C. Ellis and Fred Miles is progressing in a satisfactory manner. Practically all of the steel for the tanks to be located south of the Glenmore distillery has arrived. It is expected the line will be completed early in April. The oil will be barged on the Ohio River to a refinery in Louisville.

Dr. S. C. Lang, of Evansville, Ind., in co-operation with eastern capitalists, is preparing to develop a lot of territory in Henderson, Union and Webster Counties on acreage he has been getting under lease for several months.

P. A. Rowe & Co. have completed the latest map of the field embracing the Tri-County area, showing all of the main pools, with correct lines from actual surveys.

FILLING STATION AS ART; PICTURE IN GALLERY

Anyone who is an artist can find beauty wherever his business or pleasure around New York may take him, says the New York Times. Such is the lesson which one connoisseur drew from the annual exhibition of the Independent Artists at the Waldorf roof.

To illustrate his thesis, the connoisseur drew attention to a small and modest canvas. It was a landscape, with half a dozen houses in view. But the building which occupied the center of the canvas, the center of the artist's whole conception in executing his work, was a gasoline filling station.

There have been many complaints that filling stations are an eyesore, a positive detractor from the value of surrounding property. Mayor Gillis of Newburyport failed to get permission to erect a filling station on a lot he owned for that reason. There have been attempts to disguise the conventional red filling station with decorative painted concrete.

The canvas hung at the Independent show pictured none of these beautified filling stations. The one in the picture is the old-fashioned red shell with red pumps outside. But the artist found in it beauty sufficient to warrant his painting it.

EASTERN FIELDS

(Continued from Page 56)

trict, A. T. Spaulding has a duster in the same formation on the I. H. Lake farm.

On Macfarlan Creek, Murphy district, Ritchie County, the Hope Construction & Refining Co. has completed in the Squaw sand No. 5 on the Noah & Gay Jordan farm, estimated to be good for 20 bbls. a day. On the same stream and district, the South Penn Oil Co. is spudding in No. 11 on the Anna M. Wilson farm. On Lowthers run, same district, the Hope Construction & Refining Co. is spudding at No. 3 on the J. L. Hill farm.

Clay County

In Henry district, Clay county, the Ohio Fuel Co. has drilled deeper an old gas well on the James Reed farm estimated good for 30 bbls. a day. In Grant district, David French & Co. completed No. 3 on the Alvin Payne farm. It is a gasser in the Big Injun sand. L. N. Rinehart & Co.'s second test on the A. B.

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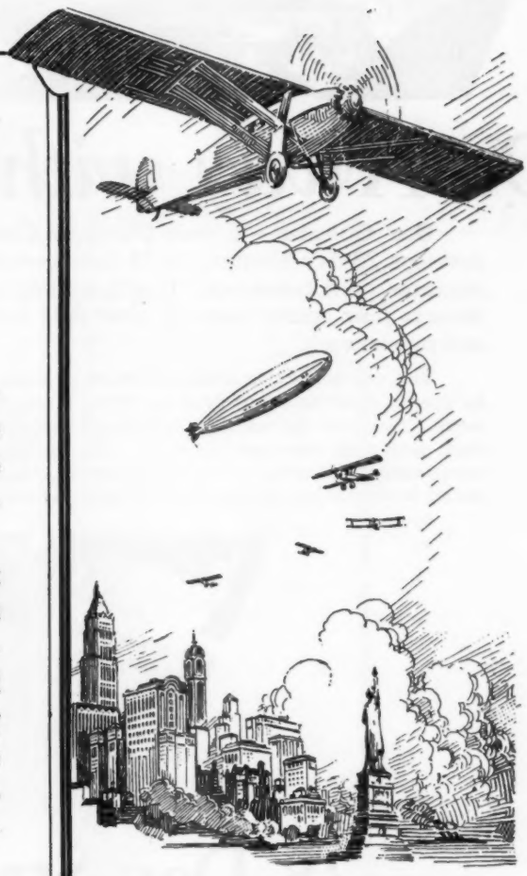

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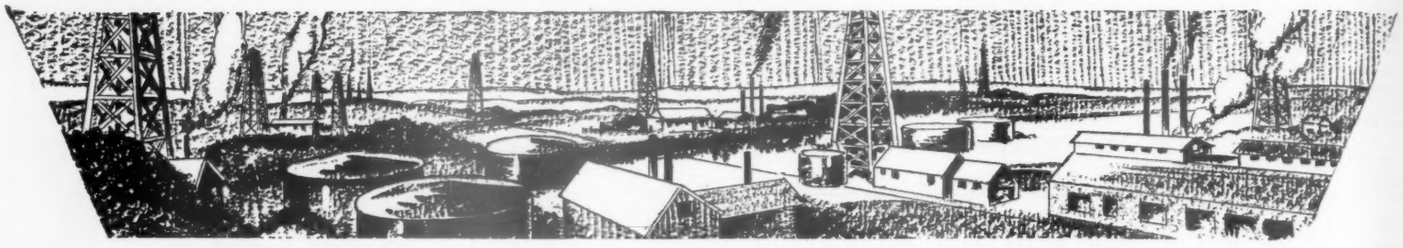

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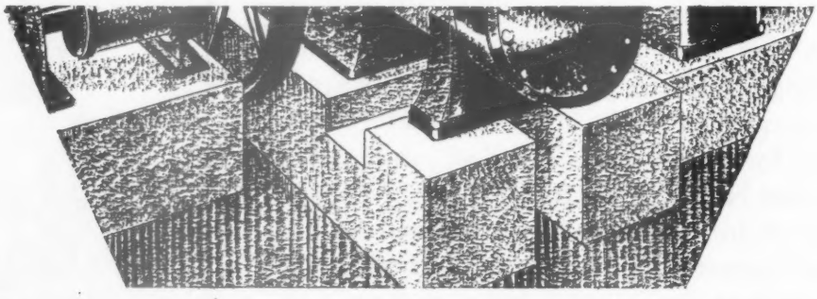

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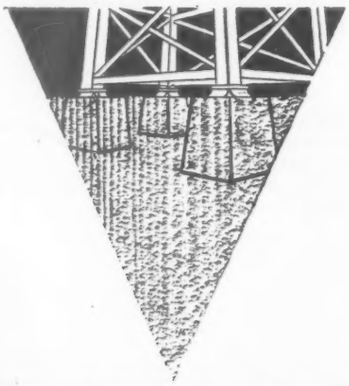

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QUIKARD CEMENT

6

Wilson farm is a gasser in the same formation.

In Geary district, Roane County, the United Carbon Co.'s No. 4 on the J. R. Keene farm is a gasser in the Big Injun sand. In Birch district, Braxton County, the Hope Natural Gas Co.'s test on the G. C. Davis farm is showing a little oil and gas in the Gordon sand. It has been shot.

In Center district, Calhoun County, the Hope Natural Gas Co.'s test on the Allen Hardman farm is a gasser in the Maxon sand. In Lee district, Kingsbury & Dollman have a duster at a second test on the L. L. Lynch farm.

In DeKalb district, Gilmer county, G. C. Roberts & Co.'s test on the Viola S. Beall farm is a gasser in the Maxon sand. In Otter district, Braxton County, the United Gas Co. has a duster in the Big Injun sand at a test on the C. F. Engle farm.

More Work in Roane

In Geary district, Roane County, the South Penn Oil Co. has completed in the Big Injun sand a test on the Catherine Nixon farm estimated good for 5 bbls. a day after shot. Within the past few months development work has been increasing. The United Fuel Gas Co. is drilling two tests on the B. L. Noe farm and rigs up on the I. C. Stump, J. T. Likenagger and A. L. Sams farm. Noble Neasttie has a rig up on the Frederick Smith 43 acres.

In Sherman district, Calhoun County, C. B. Lewis & Co. has a gasser in the Big Injun sand at a test on the Spencer White farm. In Lee district, Smith & Starcher's test on the S. Slider farm is a gasser in the same formation. The Calhoun Oil & Gas Co. is due in the sand at a test on the Guy Nitz farm. F. F. McIntosh has started to drill a test on the B. F. Stump farm.

In Carroll district, Lincoln County, the Cambridge Gas Co.'s test on the B. F. Hoskinson farm is a gasser in the Berea grit. In the same district, L. R. Sweetland has a gasser in the same formation at No. 28 on the William Woodall farm. He has started to drill No. 30 on the G. Puckett farm. C. C. Wolfe has started to drill a test on the Grant Marcus farm. G. T. Roy & Son have started to drill another test on the Nathan Stowers farm. The Columbia Gas & Electric Co. has a rig up on the C. C. Roberts farm.

Drilling and Starting Tests

In Jefferson district, Lincoln County, the Mud River Gas Co. is drilling a test on the Elizabeth Adkins farm. In the same district, Earl Cameron is building two rigs and made two locations on the Golden Stone farm. He has also made four locations on the J. E. Stone farm. In Barboursville district, Cabell County, the United Fuel Gas Co. is building a rig on the E. D. Kuhn farm. The same company is drilling at 1,700 feet on the J. A. Watts farm. In Union district, Lincoln County, Roy & McComas have started to drill on the Randolph Sias farm. In Scott district, Boone County, the Cameron Oil & Gas Co. has the roads completed to five locations on the George P. Alderson farm.

One mile east of the Ohio River in Union district, Tyler County, the Little Flower Oil Co. is hauling rig timbers to a location on the L. Erson farm. On Ellis Run, Grant district, Ritchie County, the Delta Oil Co. is moving a drilling machine to a location on J. W. Goff farm at Petroleum. R. C. Jackson is building a rig on the U. S. Oil Co.'s lease.

Wildcat in Jackson County

Located 1,000 feet from the mouth of Middle Fork of the Poca River, Washington district, Jackson County, the Producers Oil & Gas Co. is down 900 feet at an important test on the Kennan Skees farm. Four miles west of this location the Hope Construction & Refining Co. some time ago completed a test on the P. C. Casto farm.

In Barboursville district, Cabell County, Dunham & Titus have made a location on the Winnie Sallards farm. In Grant district, the Aetna Oil & Gas Co. is making a road to a location on the I. J. Reynolds farm. In McComas district, the West Virginia Gas Co. is building rigs on the William A. Childers and Mary F. Kyser farms. In Grant district, the Big Two Mile Oil & Gas Co. is due in the sand on the Ernest Mohr farm.

In McClelland district, Doddridge County, G. L. Cabot is rigging up on the Anthony Harry farm. In Church district, Wetzel County, the Carnegie Natural Gas Co. is rigging up to drill deeper old No. 1 on the Caleb Freeland farm. In the same district, the Manufacturers Light & Heat Co. has shut down at 2,700 feet on the S. and B. Long farm. In Liberty district, Marshall County, the same company is drilling a second test on the L. and J. R. Anderson farm.

Tests for Wayne County

At the mouth of Old Fork of Jennies Creek, Lincoln district, Wayne County, Heck Gas Corp. has made a location on the Thomas Caldwell farm. On the right fork of Turkey Creek, Harvey district, Mingo County, the Hub Gas Corp. has made the location for a test on the Henry Closterman estate.

Southeast Ohio

In the NE of Section 20, Harrison Township, Perry County, the Pure Oil Co. has completed in the Clinton sand a test on the Catherine Moore farm. It is a light gasser in the formation named. In the SE of Section 21, same township and county, C. H. Fouts, trustee, has drilled a test on the David E. Allen farm through the same formation and got only a very light show of oil in the Clinton sand.

In the SE of Section 11, Rush Creek Township, Fairfield County, the Ruff Stewart Oil & Gas Association's test is a duster in the Clinton sand at a total depth of 2,620 feet. In Section 25, Frank Linton and others have a rig up for a test on the Edson B. McCullough farm. In Section 23, Richland Township, Merl Myers & Co. are drilling at 2,100 feet on the G. W. and J. R. Shaw farm. In Bowling Green Township, Licking County, Robison & Zahniser have a rig completed on the Owen & Walker Hupp farm.

In Section 18, Hopewell Township, Muskingum County, the Midland Oil Co. has the rig completed for a second test on the Ella M. Denny farm. In Trimble Township, Athens County, the New Straitsville Oil & Gas Co. is drilling a test on the Bidison farm. In Section 3, Ames Township, Charles Fox and others are drilling a test on the N. E. Dean farm.

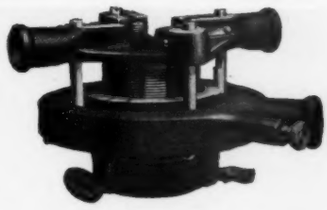
On Lot No. 5, Howell Township, Muskingum County, I. C. Robinson completed and shot in the Clinton sand a test on the J. M. Fink farm. It produced 20 bbls. natural and 30 bbls. the first 24 hours after shot.

Perry County Most Active

Perry County is leading all other counties in southeast Ohio in active operations. Nearly all of the new work under way and starting is located in Section 21. In this section, David Melick, trustee, has a rig up on the Ralph Kinnan farm. William Cline and others have started to drill on the F. W. Griswold farm. The Pure Oil Co. has a rig up on the Dora Moore farm. The Wehrle company has started to drill on the Carrie Worthington farm and has a rig up on the George McClelland farm. The Wiser Oil Co. has a rig up on the R. D. Brown farm. The Whitmer Property Corp. has rigs up on the C. A. France and William Kester farms. C. H. Fouts, trustee, is due in the Clinton sand at a test on the David E. Allen farm. The J. S. M. Oil & Gas Co. has started to drill a test on the Floyd Springer farm. The Sheuker-Bauman Oil Co. has a rig up on the Lee Meade farm. The Royal Oil & Gas Co. has a rig completed on the A. R. Vospar farm. The Kachelmach estate is starting a test on the Muskingum Pottery Co's property. C. M. Brown, trustee, is starting a test on the Mayme Pickens farm. Scott Howell and others have a rig up on the H. T. Trysinger farm.

Southwest Pennsylvania

The southwest Pennsylvania fields had but one completion at the close of the week. In Aleppo Township, Greene County, Guy Patterson completed in the Big Injun sand a second test on the Daniel Polen farm. It is a gasser estimated good for 7,000,000 feet.



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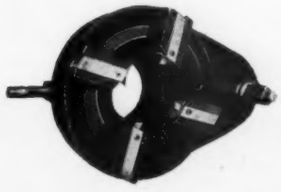

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 40)

GRAY COUNTY

Archer Blake's No. 1 Turneaux, SW cor. Sec. 111, Blk. B-2 ..... S.D., 255 ft.

Biggs et al's No. 1 Morse, SW cor. Sec. 3, Blk. 26, H. &G.N. Sur. ..... U.R. 8-in. csg., 1,600 ft.

Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17, Blk. 1 ..... S.D., 3,860 ft.

Danciger O. & R. Co.'s No. 7 W. Jackson, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... 3,000 ft. T.D.; making 5,000,000 ft. gas from 2,779-3,000 ft. and 5 bbls. oil; stdzng., 3,000 ft.

Danciger O. & R. Co.'s No. 9 W. Jackson, NW cor. NE NW, Sec. 88, Blk. B-2 ..... Fish., 2,800 ft.

Danciger O. & R. Co.'s No. 10 W. Jackson, NE cor. NW NW, Sec. 88, Blk. B-2 ..... Cmt. 8-in. csg., 2,840 ft.

Danciger O. & R. Co.'s No. 1 W. Crank, SW cor. NW, Sec. 163, Blk. 3, I.&G.N. Sur. ..... Drlg., 800 ft.

Danciger O. & R. Co.'s No. 1 A. Chapman, SW cor. NW, Sec. 7, Blk. 26, H.&G.N. Sur. ..... U.R. 8¼-in. csg., 1,510 ft; 15,000,000 ft. gas, 2,215-2,300 ft; drlg. 2,312 ft.

Danciger O. & R. Co.'s No. 1 C. W. Bradford, NE cor. SE, Sec. 123, Blk. B-2, H.&G.N. Sur. ..... 1,000,000 ft. gas, 2,410-30 ft; drlg., 2,450 ft.

Danciger Oil Co.'s No. 1 J. S. Morse, SE cor. NE SW, Sec. 2, Blk. 26, H.&G.N. ..... U.R. 8-in. csg., 1,585 ft.

Delaney et al's No. 3 W. Jackson, SE cor. NE SW, Sec. 88, Blk. B-2 ..... S.D., 3,018 ft. for orders.

Dillard et al's No. 1 Furney, NE cor. SE, Sec. 202, Blk. B-2, H.&G.N. Sur. ..... Rig.

Donley Gray Oil Co.'s No. 1 J. W. Gordon, Sec. 79, Blk. 3 ..... Wtr., 3,380 ft. and 3,430 ft; show oil; H.F.W., 3,650 ft; T.D., 3,870 ft; U. R., 6-in. csg., 3,852 ft; drlg., 4,150 ft.

Delmar Oil Co.'s No. 1 F. Foster, NW cor. SW, Sec. 55, Blk. B-2, H.&G.N. Sur. ..... Rig.

Edwards et al's No. 1 E. J. Case, NE cor. Sec. 182, Blk. B-2, H.&G.N. Sur. ..... 70,000,000 ft. gas, 2,512-2,630 ft; top G.W., 3,034 ft; drlg., 3,225 ft; 2,000 ft. oil in hole.

Empire G. & F. Co.'s No. 1 E. J. Case, C NE, Sec. 180, Blk. B-2, H.&G.N. Sur. ..... 36,000,000 ft. gas, 2,525-2,665 ft; S.D., 2,710 ft.

Empire G. & F. Co.'s No. 1 S. A. Cobb, NW cor. NE, Sec. 64, Blk. 25, H.&G.N. Sur. ..... Cmt. 10-in. csg., 1,756 ft; lowering 8-in. 2,270 ft.

Empire G. & F. Co.'s No. 1 T. Cobb-"B," C NW, Sec. 178, Blk. 3, I.&G.N. Sur. ..... Rig.

Empire G. & F. Co.'s No. 1 Bender, SE cor. Sec. 164, Blk. 3, I.&G.N. Sur. ..... Top lime, 2,507 ft; swb. 72 bbls. first 12 hrs., 3,140-75 ft; drlg., 3,255 ft.

Empire G. & F. Co.'s No. 1 A. J. Dauer, NW SE SE, Sec. 236, Blk. B-2, H.&G.N. Sur. ..... Set 12-in., 1,055 ft.

Empire G. & F. Co.'s No. 1 Holmes, C NE, Sec. 179, Blk. 3, I.&N.G. Sur. ..... Building rig.

Esiick et al's No. 1 Mrs. J. A. Hopkins, NW cor. W 80 acres of SW ¼, Sur. 84, H.&T.C., Blk. B-2 ..... Drlg., 2,110 ft.

Gibson Oil Corp.'s No. 3 J. B. Bowers, 1,650 ft. from E line and 990 feet from S line, E half, Sec. 92, Blk. B-2 ..... Struck gas, 2,925 ft; rig burned; rebuilding.

Gibson Oil Corp.'s No. 9 J. B. Bowers, NE cor. Sec. 92, Blk. B-2, H.&G.W. Sur. ..... Fish. for 5-in. csg., 2,733 ft.

Gibson Oil Co.'s No. 1 G. Pierce, SE cor. Sec. 149, Blk. B-2, H.&G.N. Sur. ..... Cellar.

Gulf Prod. Co.'s No. 4 J. B. Bowers, SE SW SW, Gulf lease in Sec. 89, Blk. B-2 ..... Drlg. G.W., 2,865 ft; making 15,000,000 ft. gas.

Gulf Prod. Co.'s No. 5 J. B. Bowers, SW SE SW, Gulf lease in Sec. 89, Blk. B-2 ..... Drlg. lime, 2,870 ft.

Gulf Prod. Co.'s No. 1 M. Davidson-A, 330 ft. from S. and E lines of NW cor. E half NW, Sec. 87, Blk. B-2, H.&G.N. Sur. ..... Drlg., 3,048 ft; showing 4 bailers wtr. per hr.

Gurnsey Oil Co.'s No. 2 B. E. McKinney, Sec. 163, Blk. 3, I.&G.N. Sur. ..... Show oil, 3,025-30 ft; fish., 3,084 ft.

Hardendorf Drlg. Co.'s No. 1 G. A. Henderson, NE E half NE, Sec. 47, Blk. 25, H.&G.N. Sur. ..... Run. 10-in. csg., 590 ft; S.D

Hickory O. & G. Co.'s No. 1 Lester, SE cor. NE NW, Sec. 1, Blk. 1, A.C.H.&B. Sur. ..... Location.

Lefors Pet. Co.'s No. 2 J. M. Shaw, NW cor. T. Leach Sur. ..... Building rig.

McAuley et al's No. 1 Morse, SE cor. N half, Sec. 3, Blk. 26, H.&G.N. Sur. ..... Drlg., 2,290 ft.

McElroy Oil Co.'s No. 1 M. B. Davis, NE cor. S 240 acres of E half, Sec. 12, Blk. 1, A.C.H.&B. Sur. ..... Rig.

Majestic Oil Co.'s No. 4 J. B. Bowers, SW cor. E half, Sec. 92, Blk. B-2 ..... Cmt. 8¼-in. csg., 2,982 ft.

Majestic Oil Co.'s No. 6 J. B. Bowers, Sec. 89, Blk. 2-B. ..... S.O., 3,700 ft; show wtr., 3,450-55 ft; drlg., 3,850 ft.

Magnolia Pet. Co.'s No. 1 J. Bowers ..... Made 400 bbls. daily from G.W., 2,853-55 ft; C.O., 2,890 ft.

Magnolia Pet. Co.'s No. 1 J. J. Wall, NE cor. Sec. 162, Blk. 3, I.&G.N. Sur. ..... S.O.&S.G., 3,190-3,202 ft; show oil, 3,335 ft; swb. 8 bbls. per hr., 3,-335-53 ft., 4% b.s. and wtr.

Midwest Expltn. Co.'s No. 1 L. Holmes, Sec. 86, Blk. 3, I.&G.N. Sur. ..... Show 43 grav. oil in G.W., 3,110-12 ft; cmt. 8-in., 3,015 ft; swbd. and flowed 1,070 bbls. first 17 hrs. from G.W., 3,110-3,332 ft.

Operators Oil Co.'s No. 2 W. Jackson, NW cor. N ½ NE, Sec. 88, Blk. B-2 ..... Cmt. 6-in., 2,810 ft.

Osborn et al's No. 1 E. E. Barrett, SE cor. NE, Sec. 111, Blk. 3, I.&G.N. Sur. ..... Spudded.

Osborne et al's No. 1 J. S. Morse, SW cor. SE, Sec. 1, Blk. 26, H.&G.N. Sur. ..... Rig on ground.

J. T. Parks' No. 1 N. H. Reed, NE cor. W 236 acres, N half, Sec. 1, Blk. B-2, H.&G.N. Sur. ..... Location.

Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3. ..... 700 ft. wtr., 3,430 ft; S.D., 3,422 ft.

Phillips Pet. Co.'s No. 1 Davidson (Myson) ..... Pulling big pipe, 2,920 ft.

Phillips Pet. Co.'s No. 2 Davidson (Myson), NE cor. NW NW, Sec. 87, Blk. B-2, H.&G.N. Sur. ..... Drlg., 2,395 ft.

Phillips Pet. Co.'s No. 3 Jackson-Riley, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... Recmntd. 12½-in., 1,027 ft; 6,000,000 ft. gas, 2,590-2,635 ft; cmt., 8¼-in csg., 2,857 ft; drlg., 2,965 ft.

Phillips Pet. Co.'s No. 4 Jackson-Riley, SE cor. W half SW, Sec. 88, Blk. B-2 ..... Drlg., 560 ft.

Plains Drlg. Co. and Ray's No. 1 A. Chapman SE cor. SW NW, Sec. 50, Blk. A-9, H.&G.N. Sur. ..... Building rig.

Plains Drlg. Co.'s No. 2 A. Chapman, NE cor. E half NE, Sec. 20, Blk. 1, A.C.H.&B. Sur. ..... Location.

Plains Drlg. Co.'s No. 2 A. Davis, 990 ft. N. and 330 ft. W. of SE, Sec. 24, J. Davidson Sur. ..... Rigging.

Purple Sage Oil Co.'s No. 2 E. B. Johnson ..... 2,000,000 ft. gas; drlg., 2,550 ft.

Ray & Massie's No. 1 A. Chapman, NE NW SW, Sec. 51, Blk. 25 ..... Show oil, 2,679-90 ft; T.D., 2,780 ft; 400 ft. oil in hole; running liner; some wtr. showing.

Rensaul Pet. Co.'s No. 2 M. Huselby, NE cor. SW, Sec. 55, Blk. 25, H.&G.N. Sur. ..... T.L., 1,675 ft; set 8¼-in., 1,851 ft; 2,000,000 ft. gas, 2,185-2,205 ft; T.D., 2,660 ft; swbd. 20 bbls. in 12 hrs. at 2,580 ft.

Scott & Travis' No. 1 A. Chapman, 990 ft. N and W of SE cor. N half SW, Sec. 70, Blk. 25, H.&G.N. Sur. ..... Rig.

St. Clair Oil Co.'s No. 1 C. H. Rowe ..... Spud. and S.D.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 55, W. R. Lee Sur. ..... Spudded and S.D.

Shamrock Oil Co.'s No. 1 Chapman, NE E half SW, Sec. 50, Blk. 25 ..... 10,000,000 ft. gas, 2,695-2,715 ft; show oil, 2,763-73 ft; T.D., 2,854 ft; 1 bailer. wtr. and little oil per hr.

Skelly Oil Co.'s No. 1 Bradford, NE cor. Sec. 118, Blk. B-2, H.&G.N. Sur. ..... 12,000,000 ft. gas, 2,765 ft; fish., 2,805 ft.

Spartan Oil Co.'s No. 1 J. Hopkins ..... S.D., 1,075 ft.

Sullivan et al's No. 1 A. Chapman-A ..... 23,000,000 ft. gas, 2,280-2,300 ft; S.O., 2,345 ft; fish., 2,937 ft.

Sullivan et al's No. 1 S. A. Cobb, NE cor. NW, Sec. 64, Blk. 25, H.&G.N. Sur. ..... Spud.

Sullivan Oil Co. et al's No. 1 M. Huselby, NW cor. E half NW, Sec. 55, Blk. 25, H.&G.N. Sur. ..... Location.

Sun Oil Co.'s No. 1 Jackson ..... Top lime, 2,035 ft; drlg., 2,950 ft.

Staggers Oil Co.'s (was Ruby Oil Co.'s) No. 1 B. F. Tally. T.D., 636 ft; S.D.

The Texas Co.'s No. 3 J. B. Bowers ..... Fish., 2,765 ft; 44,000,000 ft. gas.

The Texas Co.'s No. 4 J. B. Bowers, SE cor. SE, Sec. 93, Blk. B-2 ..... Cmtd. 8¼-in. csg., 3,108 ft; drlg., 2,810 ft.

The Texas Co.'s No. 2 H. M. Davis, SW cor. NW, Sec. 86, Blk. 3 ..... Set 8¼-in., 2,150 ft; cmt. 6-in., 3,050 ft; 1,500 ft. oil; T.D., 3,-145 ft.

The Texas Co.'s No. 1 M. B. Davis, SE cor. NE, Sec. 3, Blk. 1, A.C.H.&B. Sur. ..... Drlg., 800 ft.

The Texas Co.'s No. 1 S. McLarty-A, SW cor. E ½ NW, Sec. 1, Blk. 1, A.C.H.&B. Sur. ..... Making 40,000,000 ft. gas; flowing 135 bbls. oil daily, 2,410 ft; may D.D.

The Texas Co.'s No. 1 S. McLarty ..... T.L., 1,712 ft; cmt. 6-in. csg., 2,-525 ft.

The Texas Co.'s No. 1 C. Thut, C N half of E 320 A, Sec. 1, H.&G.N. Sur. ..... 10,000,000 ft. gas, 2,436-40 ft; making 1 bailer 42 grav. oil per hr., 2,806-15 ft; drlg., 3,080 ft.

The Texas Co.'s No. 2-A Chapman, NE cor. NW NW, Sec. 51, Blk. 25, H.&G.N. Sur. ..... 2,000 ft. oil in hole, 2,722-50 ft; well paraffined up.

The Texas Co.'s No. 2 Chapman-B, Sec. 31, Blk. 25, H.&G.N. Sur. ..... Rig.

The Texas Co.'s No. 1 J. E. Williams, NW cor. NE NW, Sec. 7, Blk. 1, A.C.H.&B. Sur. ..... Spud.

Tobins Oil Corp.'s No. 1 W. H. Taylor, C NE, Sec. 10, Blk. B-2 (formerly Smallwood et al's) ..... T.S., 765 ft; drlg., 1,200 ft.

Viola Oil Corp.'s No. 1 G. H. Saunders ..... Drlg., 1,930 ft.

HALE COUNTY

Bailey & Young's No. 1 Thomas, Sec. 1, Blk. J.K.L. ..... S.D., 175 ft.

Donnell Pet. Co.'s No. 2 Mullican, NW cor. Sec. 66, Blk. A-3, L&S.B. Sur. ..... Top pay in sandy shale, 495 ft; ¼ bailer oil and 3 bailers wtr. per day; S.D., 630 ft.

Donnell Pet. Co.'s No. 1 Mullican, C Sec. 21, Blk. B, R. M. Thompson Sur. ..... 200 ft. fluid in hole from 407-14 ft; S.D.

Expltn. Co.'s No. 1 Crawford, C NE, Sec. 17, Blk. C-3, T.T.R.R. Sur. ..... Spudded and S.D.

Expltn. Co.'s No. 1 Goodman ..... S.D., 350 ft.

A. S. Mimm's No. 1 W. A. Ritcher, 700 ft. from east line and 1,200 feet from south line, Sec. 17, Blk. X, John Glynn Sur. ..... S.D., 1,140 ft.

Tolbert & Simms' (was Gouldy & Stone's) No. 1 Kitteral, SE cor. NW, Sec. 66, Blk. A-3, G.C.&S.F. Sur. .. S.D., 485 ft.

HALL COUNTY

Briscoe Oil Assn's (was Seifert et al's) No. 1 Owens, C NE, Sec. 179, Blk. S-5, Dennison & Pacific Sur. .. Spudded and S.D.

HANSFORD COUNTY

Caldwell et al's No. 1 J. Adriance est. ..... Drlg., 1,350 ft.

Oklavania et al's No. 1 Coots, Sec. 13, Blk. 45, H.&T.C. Sur. ..... Cmt. 10-in. csg., 990 ft; drlg., 1,-830 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood ..... S.D., 1,455 to install rotary.

HARTLEY COUNTY

Deep Rock Oil Co.'s No. 1 Lymann & Balfour, Sec. 9. Preparing to abd., 4,038 ft.

J. E. McKanna's No. 1 Francis Farwell ..... C.O., 3,501 ft; to drill deeper; abd., 10-20-27; at 3,591 ft; salt wtr., 3,598-3,620 ft; T.D., 3,630 ft; to plug.

HEMPHILL COUNTY

Hoover et al's No. 1 Schaller est., Sec. 4 ..... Spudded and S.D.

Hoover et al's No. 1 fee, J. S. Hood Sur. ..... 300 ft. wtr. in hole; S.D., 5,060 ft; rainbow show.

HUTCHINSON COUNTY

Alamoso Oil Co.'s No. 2 J. M. Sanford, Sec. 83, Blk. 46, H.&T.C. Sur. ..... Spudding.

R. G. Barnum et al's No. 1 Garland Sanford, Sec. 78, Blk. 46 ..... Rig.

Barnum & Delmar's No. 1 Johnson Bros., NW cor. E half, NW, Sec. 37, Blk. Y, A.&B. Sur. ..... Rig.

Beam et al's No. 1 Cockrell, Sec. 3, Blk. 23 ..... S.D., 495 ft. for orders.

Big Coach Oil Co.'s No. 1 Dunnaway, Sec. 5, Blk. Y. ..... S.D., 750 ft.

Conklin et al's No. 1 Johnson, Sec. 1, Blk. X03, H.&O. B. Sur. ..... S.D., 600 ft.

Dixon Creek Oil Co.'s No. 1 Burnett est., NW cor. of E 240 A of N 320 A, Sec. 120, Blk. 5, I.&G.N. Sur. .. 6,000,000 ft. gas, 2,775 ft; drlg., 2,960 ft.

Harris et al's No. 1 J. Q. Bost, Sec. 10, Blk. Y-2, T.T. R.R. Sur. ..... S.D., 1,915 ft. (corrected).

Holmes & Quinn's No. 1 J. K. Quinn, SW cor. Sec. 9, Blk. 3, B.S.&F. Sur. ..... Drlg., 2,350 ft.

McMan O. & G. Co.'s No. 1 Albert Yake, SW cor. SE, Sec. 2, Blk. J, H.&G.N. Sur. ..... Set 8¼-in. pipe, 2,107 ft. Show gas 2,220 ft; 10,000,000 ft. gas; spraying 10 bbls. daily, 2,990-92 ft; T.D., 3,012 ft; swb. 5 bbls., and 200 to 500 bbls. salt water; to abandon.

Phillips Pet. Co.'s No. 2 Garland, Sec. 77, Blk. 46 ..... Rig.

Phillips Pet. Co.'s No. 12 Elva-Whittenburg, E. Tomlinson Sur. ..... T.A., 4,445 ft.

Phillips Pet. Co.'s No. 2 Chap, NE cor. E 80 acres of the S 160 acres of Sec. 78, Blk. 46 ..... Rig.

Phillips Pet. Co.'s No. 2 Land, NW cor. of E 40 acres, N 80 acres of S 320 acres, Sec. 82, Blk. 46 ..... Rig.

Phillips Pet. Co.'s No. 1 Perkins-Hamilton, SW cor. of N 240 acres of S half, Sec. 22, Blk. 47, H.&T.C. Sur. .. Location.

Skelly Oil Co.'s No. 2 Armstrong & Byrd ..... Set 12-in. csg., 1,425 ft; run. 10-in., 1,475 ft; to carry.

Skyrocket Oil Co.'s No. 1 Mrs. R. A. Jameson ..... 800 ft. oil in hole from 3,146 ft; drilled to 3,150 ft; shot with 60 qts., 3,125-60 ft; bridged; no increase in oil after deepening; pumped 25 bbls. in 5 hrs; to put on gas lift for test.

Timms & Dietsch's No. 1 C. R. Garner, NE cor. W 80 of SE, Sec. 124, Blk. 4, I.&G.N. Sur. ..... Cellar.

Wendell et al's No. 1 Johnson Bros., Sec. 1, Blk. X02. S.D., 1,164 ft.

Humble O. & R. Co.'s No. 1 Pitchfork, Sec. 171, Blk. A-96, John H. Gibson Sur. ..... Hole full wtr., 3,375 ft; U.R. 6-in. csg., 3,725 ft.

J. L. Pattison's No. 1 Patton ..... Slight show gas, 2,115-30 ft; fish., 3,410 ft.

LAMB COUNTY

Dan Freel et al's No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Spudded and S.D.

Spade Oil Co.'s No. 1 Andrews, 1,085 ft. from N. line and 200 ft. from E line, Labor 23, League 643, (5 miles NE of Littlefield) ..... Spud and S.D.

Tolbert & Simms' No. 1 Ellwood, NE SW SW, Sec. 14, Blk. B, R. M. Thompson Sur. ..... 712 ft; small show oil and hole full wtr.; dry, 1,504 ft; temp. abd.

LIPSCOMB COUNTY

Cal-Tex's No. 1 Bradford, C NE NE, Sec. 399, Blk. 43, H.&T.C. Sur. ..... Spudded and S.D.

Camp Creek Oil Co.'s No. 1 Mrs. H. D. May, Sec. 612, Blk. 43 ..... S.D., 2,000 ft.

McCorkle's No. 1 A. Barton, NE cor. SW SE, Sec. 504, Blk. 43, H.&T.C. Sur. ..... Wtr. in lime, 4,126-40 ft; 6-in. set, 4,155 ft; 5 3/16-in. csg. set, 4,-420 ft; S.D., 4,705 ft.

Ozark Drlg. Co.'s No. 1 Frass, NE SE, Sec. 106, Blk. 10, H.&T.C. Sur. ..... Rig on ground.

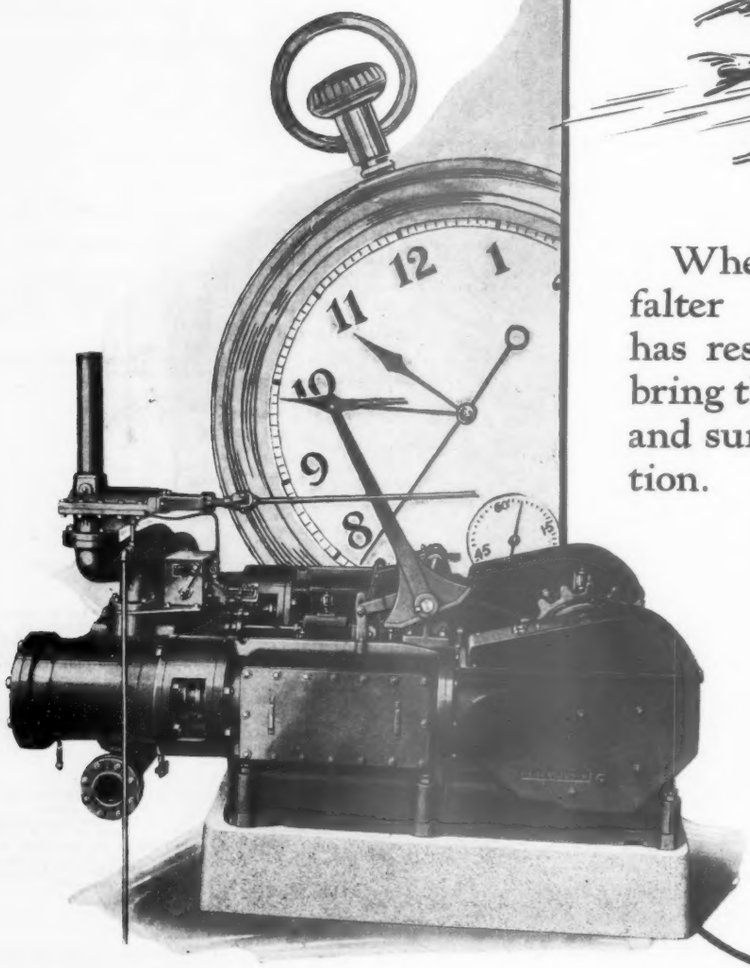
Smith, Kinsley & Ruby's No. 1 C. W. Jones, NE cor. SW, Sec. 100, Blk. 43 ..... Show oil, 3,520 ft; S.W., 3,900 ft; 6-in. csg., 4,380 ft; S.D., 4,380 ft.

"We saved two days on

IN DRILLING

bailing, casing, and every other operation, Ajax and Ideal-Ajax engines reduce the time involved.

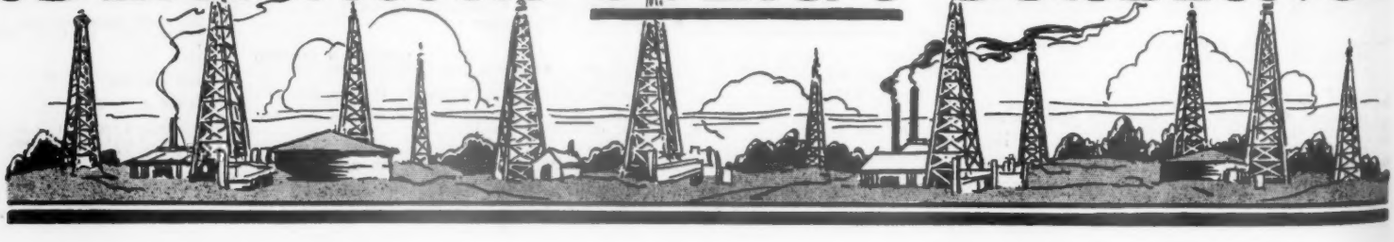
Where gas engines falter Ajax always has reserve power to bring the task swiftly and surely to completion.



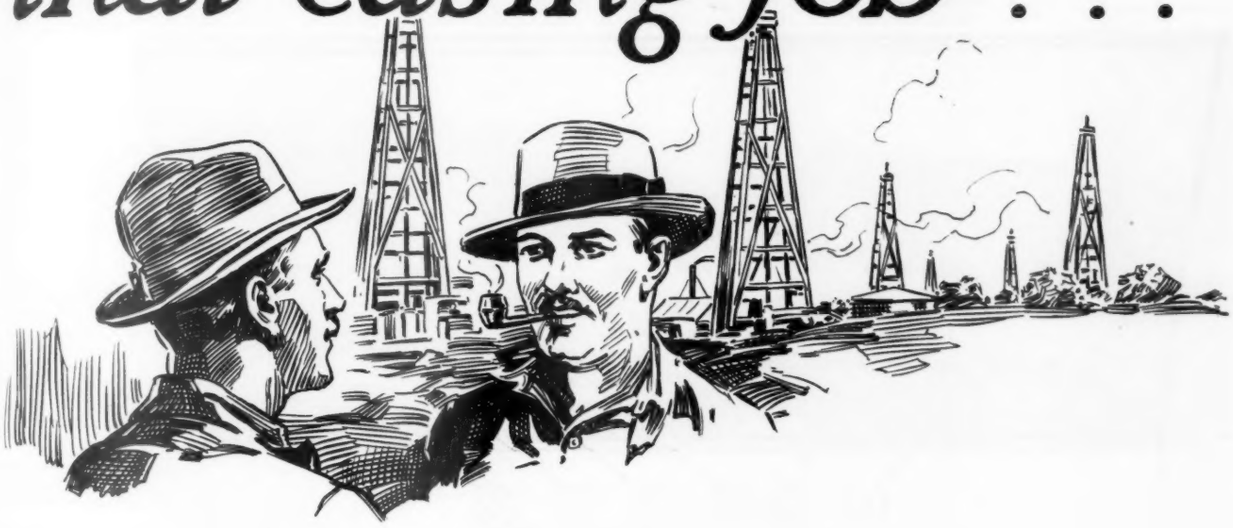
Ballard No. 4 of the Mulberry Oil Co. near Cushing, Okla. This well was drilled by J. Long with a 12x12 Ideal-Ajax Twin, and drilled in with a 12x12 Ajax, total depth, 4175 feet.

On this job a record was established of 3,880 feet of 8-in. casing set in 23 days.

IDEAL-AJAX STEAM DRILLING



that casing job" . . .



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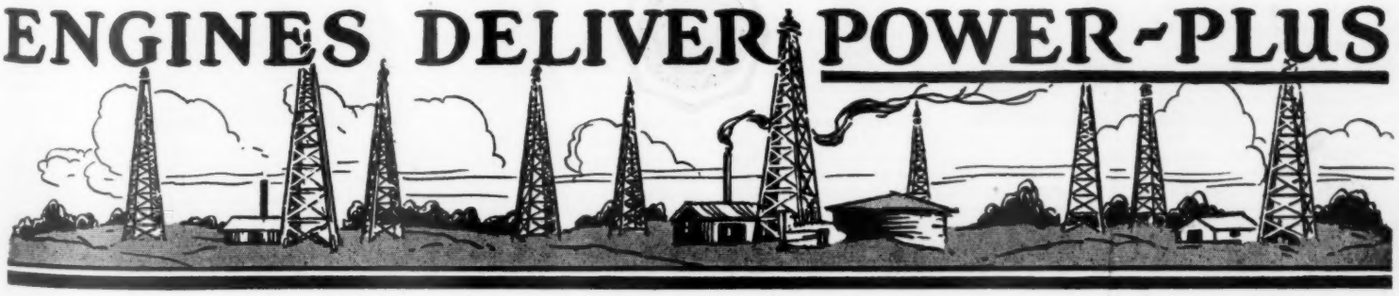

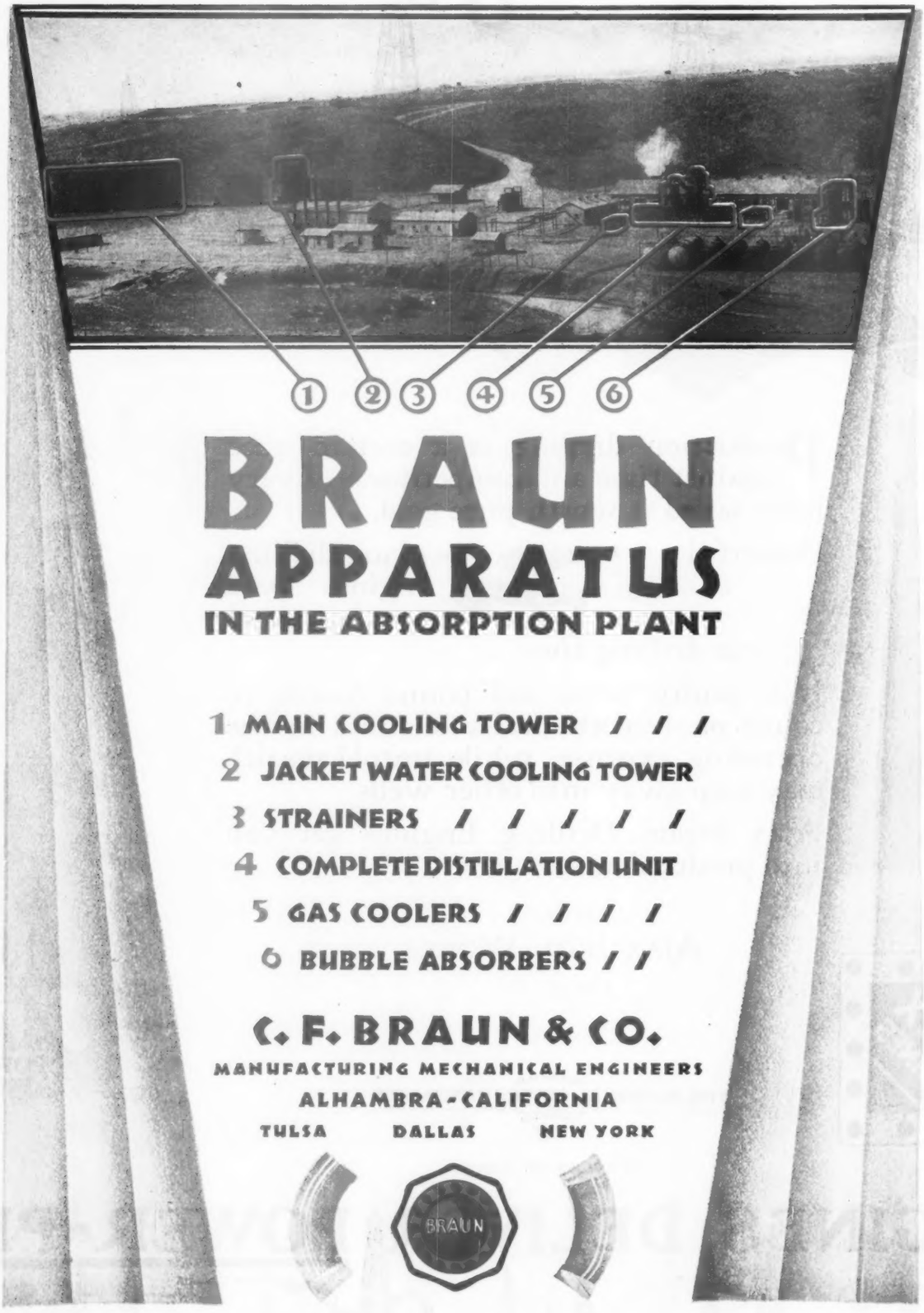
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LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles ranch ..... Small show oil, 1,133-40 ft. in sand; S.D., 2,730 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Thompson-Amarillo, C Sec. 22, Blk. 26, E.L.&R.R. Sur. ..... Drlg., 1,125 ft.
Amarillo Oil Co.'s No. 1 J. T. Sneed, Jr., C W 640 acres, Horace Hall Sur. ..... Location.
Amarillo Oil Co.'s No. 1 D. P. Seay, C Sec. 85, Blk. 2, G.&M. Sur. ..... Moving in rig.
Amarillo Oil Co.'s No. 1 L. H. Crawford, C SE, Sec. 26, Blk. P. M., E.L.R.R. Sur. ..... Building rig.
Prairie and Shamrock's No. 2 Gober, Sec. 16, Blk. M-21 .. T.D., 2,520 ft; cmntd. 10-in. csg. 2,636 ft; drlg. by tools, 2,636 ft.

MOTLEY COUNTY

Explin. Co.'s No. 1 Burleson ..... Spudded and S.D.
Explin. Co.'s No. 1 Tillson ..... S.D., 750 ft. for repairs.
Explin. Co.'s No. 1 Matador Land & Cattle Co., C SW, Sec. 97, John Gibson Sur. ..... S.D., 1,002 ft.
Matador Oil Corp.'s (formerly Wheeler et al's) No. 1 C. D. Bird, SW cor. NW, Sec. 4, Blk. S, Stephens Sur. ..... Drlg., 500 ft.

OLDHAM COUNTY

Prairie O. & G. Co.'s No. 1 Landegrin, SE cor. NE SW, Sec. 46, League 310, Capital land ..... 1,900 ft. wtr., 4,085-93 ft; 1 bailer wtr. per hr. and light scum oil 4,527 ft. (steel line meas.); cmt 6-in., 4,442 ft; 2,000 ft. SW.W 4,850-56 ft; T.D., 5,645 ft; P.B. to shoot.

OCHILTREE COUNTY

W. G. Burton's No. 1 Strickler ..... Drlg., 4,007 ft.
Hamilton et al's H. E. Wamble ..... S.D., 250 ft.
McCorkle P. L. Co.'s No. 1 R. H. Moore ..... S.D., 1,600 ft.
Montgomery's No. 1 Weinett ..... S.D., 850 ft.
Standard Development Co.'s No. 1 Bowen ..... S.D., 900 ft.

POTTER COUNTY

Amarillo Oil Co.'s No. 1 Masterson-K, C SW, Sec. 85, Blk. O-18, D.&P.R.R. Sur. ..... Recmntg. 12½-in. csg., 1,000 ft show gas, 1,650 ft; drlg., 2,160 ft.
Amarillo Oil Co.'s No. 1 Fuqua, C NW, Sec. 18, Blk. 6, B.S.&F. Sur. ..... Drlg., 1,125 ft.
Amarillo Oil Co.'s No. 1 Lee Bivins-B, C NW, Sec. 27, Blk. O-18, D.&P.R.R. Sur. ..... Cellar.
El Rio Oil Co.'s No. 1 River Bed, 530 ft. N and 670 ft. W of NE cor. Sec. 106, Blk. 46, H.&T.C. Sur. and in Canadian River Bed ..... Drlg., 600 ft.
Frank Allen et al's No. 1 W. H. Bush ..... Fish., 410 ft; corrected, T.D.

RANDALL COUNTY

Westbrook Oil Co.'s No. 1 J. Beckman, SW cor. SE NE, Sec. 46, Blk. B-5 ..... S.D. for orders, 3,712 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A ..... Show gas, 4,990 ft; show oil, 4,992 ft; csg. set, 4,992 ft; T.D. 5,153 ft; set 3-in., 5,155 ft; S.D., 5,240 ft.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 3-B ..... 100,000 ft. gas, 2,016-26 ft; T.D. 3,353 ft; 2,000 ft. S.W., 3,325-33 ft; S.D., 3,410 ft.

SWISHER COUNTY

Adams & Pritchard's No. 1 Crawford, Sec. 39, Blk. W-1, T.T.R.R. Sur. ..... S.D., 440 ft.

WHEELER COUNTY

Byrens et al's No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ..... U.R. 10-in. csg., 825 ft. and S.D.
Clark et al's No. 1 J. D. Purcell, C NW SW, Sec. 51, Blk. H.&G.N. Sur. ..... Spud.
Lone Star Gas Co.'s No. 1 C. George, C SE SE, Sec. 88, Blk. 17, H.&G.N. Sur. ..... Drlg., 214 ft.
Rook et al's (was Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur. ..... T.L., 3,040 ft; drlg., 3,300 ft.
Sabine Oil Co.'s No. 1 E. L. Woodley, C SE SE, Sec. 21, Blk. 24, H.&G.N. ..... Drlg., 800 ft.
Smith Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 ..... S.D., 2,120 ft. for orders.
Sun Oil Co.'s No. 1, G. Krc., C NW NW, Sec. 127, Blk. 23 ..... 55,000,000 ft. gas, 1,934-2,025 ft; drlg.
Vaughan et al's No. 1 M. Ackley ..... Location.
H. Vaughan et al's No. 1 C. C. George, C SE NW, Sec. 96, Blk. 17, H.&G.N. Sur. ..... Drlg., 2,020 ft.
Vaughn et al's No. 1 B. Woodley, C SW NW, Sec. 21, Blk. 24, H.&G.N. Sur. ..... Location.
Vaughn et al's No. 1 A. Wood, C NW SW, Sec. 21, Blk. 24, H.&G.N. Sur. ..... Location.
Vaughn et al's No. 1-B Ackley, C NE NW, Sec. 4, Blk. 27, H.&G.N. Sur. ..... Drlg., 1,000 ft.
Kaufold et al's No. 1 E. R. Wallace ..... S.D., 300 ft.
Pete Woodley's No. 1 J. Boyle ..... Run. 8¼-in., 1,500 ft.

OPERATORS TO DISCUSS CURTAILMENT PLANS

(Continued from Page 33)

the coming sale of Osage Indian oil and gas leases.

The Seminole operators' meeting resulted in another extension of the current shutdown agreement in the outlying regions for 30 days, making May 1 the date of the expiration of this plan in the regions around the Prairie Oil & Gas Co.'s Baker well in Section 24-9-5, southeast of the Earlsboro Pool; the Gypsy Oil Co.'s Mission and Dosar wells in Sections 5-8-6 and 7-8-6 to the west of the Bowlegs Field; the Gypsy Oil Co.'s Brown well in Section 33-8-6; the Mid-Continent Petroleum Corp.'s well in Section 5-7-7, and the Barnsdall Oil Co.'s Fife well in Section 14-8-5, north of Maud.

All of these wells are producers which are limited in output to 100 bbls. per day, and drilling around them has been postponed. They are believed to have a total potential production of 8,000 bbls., and when finally opened will cause at least 150 tests to be drilled. The Barnsdall well is thought to be the best producer now shut in.

Include All Sands

The Seminole operators also agreed to include all producing sands in the St. Louis-Pearson Switch area which is now showing promise of developing good output above the Wilcox sand. When this area was first included in the Seminole shutdown plan, the provisions of the plan were only applied to the Wilcox sand, as at that time it was the only formation which was believed to have production sufficient to disturb the market. Drilling has revealed that the Viola lime, the Simpson sand and the Hunton lime may offer wells of good yield. For this reason, all sands were included in the new agreement for this region.

The plan for Pearson Switch-St. Louis section now calls for the pinching in of the discovery well and offset wells to 100 bbls. per day. The discovery well is to be allowed to flow at full capacity until the first of the offset wells touches the sand.

The meeting of the Mid-Continent Oil & Gas Association was broader in scope than the Seminole meeting, and it had for its most important discussion the consideration of handling all wildcat wells now drilling in the two States.

Several plans were advanced for this situation, and it is reported that the matter will be handled by regions taking into consideration the lease owners in each separate operation, and formulating some plan of action similar in nature and character to the plan of test well drilling now in vogue in the Little River area. The matter will not be handled by the Mid-Continent Oil & Gas Association as a body.

The majority of those present favored the idea of the Little River test well plan, and by obtaining the consent of those interested around wildcat drilling wells, it is probable that such a system will be put in operation. The most acceptable plan seemed to be to allow any wildcat well to flow at full capacity when the sand is found until the offset well reaches the sand, when the discovery well and the offset shall be pinched in to 50 bbls. daily. This matter is a problem of the future and depends upon the productivity of wildcat drilling operations.

The Mid-Continent Oil & Gas Association appointed a committee of three to confer with Secretary Work in the hope of effecting a withdrawal of the Naval Reserve tracts from the coming Osage sale. The committee appointed is composed of E. B. Reeser, president of the Barnsdall Oil Co.; J. C. Denton, vice presidet of the Mid-Continent Petroleum Corp., and Ray M. Collins, umpire in charge of the Seminole Field. They have an appointment with Secretary Work on Wednesday, March 21.

The Mid-Continent meeting also indorsed the actions of the Texas operators and State officials in their attempt to curtail the output of the Hendricks and other pools of West Texas, and also lauded the actions of the California producers in handling their vast output in such excellent manner.

Resolution Adopted

The following resolution was adopted at the meeting of the Oklahoma-Kansas Division of the Mid-Continent Oil & Gas Association in Tulsa, March 15:

Whereas, for some months past there has been an acute and demoralizing condition of overproduction in the oil industry throughout the United States which is greatly aggravated by the quantity of production shut in in California, Wyoming, West Texas and in the Greater Seminole area in Oklahoma; and

Whereas, during this period the oil industry in the States and districts above named has been endeavoring to restrict drilling and curtail production to stabilize the industry and to promote conservation; and;

Whereas, the Kansas-Oklahoma Division of the Mid-Continent Oil & Gas Association has called a special meeting for Friday, March 23, to consider the question of appointing an advisory committee, delegating to such committee the duty of keeping informed regarding wildcat and other operations the effect of which may be to aggravate the condition of overproduction, and the further duty on the part of such committee, if constituted at such meeting, by persuasive and other lawful means, to induce the operators in both Kansas and Oklahoma to restrict drilling in all prospective areas therein to the extent that this can be done consistently with lease obligations, etc.; and,

Whereas, the Secretary of the Interior will offer for sale on March 29 four (4) quarter sections of land in the Osage Indian Reservation adjoining a producing well of large capacity and, in the opinion of this association, may open up a new pool of major proportions; and,

Whereas, voluntary action among operators to restrict drilling and curtail production is discouraging unless all producing areas resort to the same methods of conservation;

Be It Resolved by the executive committee of the Mid-Continent Oil & Gas Association that to promote the cause of conservation of petroleum in the States of Oklahoma and Kansas, and to encourage similar action among operators in other States and districts throughout the United States, that the Secretary of the Interior be requested to offer for sale such four quarter sections in the Osage Reservation subject to the two following specific conditions: First, that during the existence of overproduction in the petroleum industry, that fact to be determined by the Secretary of the Interior, that no well except an offset well be drilled on any one of said four quarter sections; and, second, that during each period of overproduction any producing well drilled on any such quarter sections that the production therefrom be restricted to 50 bbls. per day.

Be It Further Resolved, that J. C. Denton, Ray Collins and E. B. Reeser, members of this association, be appointed a committee to appear before the Secretary of the Interior and submit this resolution and offer in support thereof such facts and arguments as may be necessary to bring about the request contained in this resolution.

CREOLE STOCKHOLDERS APPROVE JERSEY PLAN

NEW YORK, Mar. 17.—Stockholders of the Creole Syndicate, at a special meeting ratified a plan for reconstruction of the company's capital structure under which control is to pass to the Standard Oil Co. of New Jersey. More than 60 per cent of the stock was represented by the holders in person or by proxy, it was announced.

The plan calls for an increase in the authorized number of shares from 2,500,000 to 6,000,000 shares. The name is to be changed to the Creole Petroleum Corp. The Standard of New Jersey will own 51 per cent of the stock of the new company and will provide $8,000,000 of working capital. New officers are to be named by the Standard of New Jersey. That company also will be represented by a majority of the directors. The notice to stockholders said:

"The Standard of New Jersey will acquire control of the Creole Syndicate and will transfer to it, either directly or through stock ownership or otherwise, all of the concessions, properties, equipments, land, buildings, etc., owned or controlled by the Standard of New Jersey in Venezuela directly or through its subsidiaries, the Standard Oil Co. of Venezuela and the American-British Oil Co.

"The concessions mentioned comprise exploration and exploitation concessions containing approximately 780,000 hectares in western Venezuela and 400,000 hectares in eastern Venezuela; and the Creole Syndicate will also acquire the interests of the Standard of New Jersey or of said subsidiaries or either of them in certain contracts with British Controlled Oilfields, Ltd., Central Area Exploitation Co., Maracaibo Oil Exploration Co. and others.

"The proposed plan also involves the acquisition by the Creole Syndicate of all the stock of Venezuela International Corp., which through ownership of all the stock of South American Oil & Development Corp. will own certain Venezuelan concessions having an exploration area of 1,280,000 hectares. If the proposed plan is carried out, an operating management selected by the Standard of New Jersey will be placed in charge of the company's affairs."

The Creole Syndicate has been under the control of Naphen & Co., Blair & Co., Inc., and associates. Large blocks of the stock are held in Europe. The syndicate owns outright, or through its subsidiaries, 1,400,000 hectares of oil concessions in Venezuela. Its production from its lake properties, which it owns joint-account with and which are operated by the Venezuela Gulf Oil Co., a subsidiary of the Gulf Oil Corp., is running above 300,000 bbls. of crude oil a month and increasing. The syndicate is now developing on its own account the Rio Palmar Field, which it wholly owns through a subsidiary, the Rio Palmar Oil Fields Corp. Its Zambapalo well No. 2 there was tested recently and flowed at the rate of 3,200 bbls. a day. Well No. 3 is nearing completion.

Announcement was made that the Standard Oil Co. of Venezuela, in eastern Venezuela, State of Monagas, completed Moneb No. 1 well at a depth of 2,239 feet. "This well," the announcement said, "blew in with a terrific gas pressure and actually tested 1,000 barrels in 12 hours. Gravity of this oil is understood to be about 19 degrees. The Standard of Venezuela and Creole Syndicate together have more than 750,000 acres in this new field."

Royal Dutch, the Gulf and the Lago are the three principal operators in Venezuela, but the Standard of New Jersey now promises to become an equally important factor. The Royal Dutch, as one of the world's largest producing interests, has been greatly concerned over the increasing interest which American oil companies have been taking in Venezuela.

PURE OIL SCOUT DEAD

Dewey Briley, 29, Pure Oil Co. scout out of Mexia, Tex., died last week after five months' illness.

CALIFORNIA FIELDS

(Continued from Page 53)

cidentally is still drilling ahead. The wells in question are No. 9 Cresson at 6,565 feet, No. 4 Martin at 6,515 feet, No. 5 Patton Wilson at 6,557 feet and No. 24 A'amitos at 6,520 feet. This entire quartet is rotating ahead in a very prolific oil sand which other operators have failed to take the maximum advantage of because they stopped drilling too soon and judging by the kick which these wells have displayed during the past 10 days, the Shell naturally anticipates substantial production. The discovery by the Shell that commercial production could be expected below the 6,500-foot level at Long Beach is not generally known throughout the field but now that the cat is out of the bag it would not be amiss to call attention to the fact that production may even be developed down to the 7,000-foot level. The increased activities of the Shell resulted in the staking of nine new locations by this company during the past 10 days in addition to the six new rigs in course of construction and the 34 new wells already on the way down.

Drilling Deeper

The importance of the additional penetration in the deep sand proven up by the Shell at Long Beach has been recognized by several operators and preparations are already being made to take advantage of the maximum amount of sand present. The McKeon Drilling Co., for instance, ki'led No. 1 MacCrate, a 750-bbl. well, a week or so ago in order to resume drilling at 6,179 feet and the additional amount of sand opened up has almost doubled production, the present output be'ng 1,430 bbls. per day. The Superior Oil Co. finished an exceptionally good well a few days ago when No. 3 Crew was brought in under a natural flow doing 200 bbls. an hour from the 6,400 foot level and while it settled the following day to 3,870 bbls. of clean 30.1 gravity oil and 2,750,000 feet of exceptionally well-saturated natural gas per day it is holding up with clock-like regularity. This is the first big well which the Superior has finished in the lower zone at Long Beach and the boys are pulling for "Bill" Keck to bring in a few more. Dri'ling operations during the past week resulted in two short blowouts and while neither resulted in any damage several derricks were painted and the surrounding acreage pretty well oiled up. Dabney & Johnson's No. 3 ran wild for several hours from the 6,200-foot level but sanded up without catching fire or resulting in any serious damage, although it was producing at the rate of around 2,000 bb's. per day. This well has subsequently been cleaned out and drilling is again under way. Doyle & Clune's No. 1 Long Beach, which was be'ng redrilled and deepened from the upper to the lower horizon, flowed wild for approximately two hours but it too sanded up before resulting in any heavy damage.

A check of the various drilling projects under way in the Long Beach Field at the present time indicates the probable completion of a large number of new wells during the course of the next 60 days and daily production of th's field will reflect their completion in a very substantial manner. The additional penetration in the lower zone proved up by the Shell will probably retard the completion of new wells in the Long Beach Field anywhere from two weeks to 30 days as it is highly probable that operators will continue dri'ling in order to take advantage of the maximum penetration available instead of finishing around the 6,000-foot level, as has been customary heretofore. The additional thickness of sand may also change the peak production and the added time required to make the additional hole may even carry the peak over into June, although it is the general consensus of op'nion that the 1928 high will be reached some time during the month of May.

Seal Beach

Although there are several wells headed down to the lower horizon in the Alamitos Heights town lot section of the Seal Beach Field, deep sand exploitation in this area has not yet become general, although deepening operations will undoubted'y be greatly stimulated if George F. Getty succeeds in completing his No. 12 Alamitos as a big well when it makes its bid for production some time during the next week. This projected Bonner zone completion looks good for at least 1,000 bbls. per day from the 6,500-foot level and the additional hole to be added may result in a considerably larger production. Getty's project, a former upper zone producer, should prove the productivity of the deep sand at Alamitos Heights conclusively as it is more favorably located than any of the deep zone wells finished by the Marland in the northern part of its Selover lease adjoining the town lot area. The latter company has finished three commercial producers in the deep Bonner zone on the Selover property up to the present time, Nos. 11, 16 and 19 coming in doing 1,000 bbls., 1,010 bbls and 1,025 bbls., respectively, and if everything goes along according to schedule two more projects should be on production shortly. The Petroleum Securities is carrying two wells down to the deep Bonner zone encountered be'ow the 6,000-foot level and both of them should be given production tests some time during the early part of April. Paul Getty will probably also test out the potentiality of the deep zone along about the same time.

Ventura Avenue

Two new wells were finished in the Ventura Avenue Field this week simultaneous with the inauguration of the gas conservation program and it is need'ess to say that the engineering and geological departments of the various companies have had a very busy period. One of the new wells f'nished was No. 102 Lloyd of the Associated, which came in flowing 3,200 bbls. of 30.1 gravity oil and 3,500,000 feet of wet gas per day. This new well which is the largest and deepest producer in the State at the present time, came in under a natural flow from a depth of 7,210 feet, the pressure on the casing being 750 pounds and on the tubing, 460 pounds. The deep sand record at Ventura Avenue has been broken by the Associated and Shell on four different occasions since January 1, last and judging by the status of other projects under way, the present record may only be of a temporary nature. The Shell started off the year by bringing in No. 18 Edison from 7,015 feet but the Associated eclipsed this record within a short time by bringing in No. 1 Dabney Lloyd producing from 7,072 feet. The Shell next brought in No. 19 Ed'son from an even 7,100 feet, 110 feet shallower in actual lineal feet than No. 102 L'oyd just finished by the Associated at 7,210 feet.

The second well finished during the past week was No. 21 Taylor of the Shell, which was redrilled and deepened from 5,643 feet to 6,769 feet, from which depth it came in under a natural flow doing 1,625 bbls. of 29.1 gravity oil and 2,300,000 feet of wet gas per day. This rejuvenated project, which is located in the southern part of the field just north of the Willett lease of the Petroleum Securities is one of the deepest producers in the southern end of the field, although No. 3 Willett of the Petroleum Securities will be somewhat deeper upon completion, as it is at present rotating ahead in the oil sand at 6,630 feet. The gas conservation program at Ventura Avenue is not expected to result in a curtailment of drilling operations un'ess something unforeseen develops, and it is logical to assume therefore that normal development work will continue during the next several months. The completion of some 10 or 15 new wells during the next 90 days would ordinari'y complicate the engineering features incident to the proration program now in effect, but due consideration was given to this factor and future development work will not defeat the end to be accomplished regardless of the number of new wells to be finished as subsequent completions are scheduled to be beaned down after a conclusive production test. The Associated and Shell have each shut in approximately 4,300 bb's. per day of crude oil production in order to effect the designated reduction in natural gas production, while the Petroleum Securities and General Petroleum have pinched in approximately 1,000 bbls. each.

Rincon

Drilling operations in the Rincon Field of Ventura County did not show any appreciable change during the current week as most operators are marking time pending the outcome of the Pan American's No. 2 State, a deep test which is rotating ahead at 3,650 feet in search of a lower and more productive horizon. This project shou'd be watched very closely during the next 30 or 60 days as it may result in a general deepening campaign if the Pan American succeeds in opening up a deep projected horizon, in which event field production would probably show a very substantial increase. An additional brief was filed with the supreme court yesterday by attorneys Smiley, Flint, Mackey and Sokolow supporting Suveyor General Kingsbury in his refusal to grant dri'ling permits on the state tidelands at Rincon. The surveyor general contends that the leasing act of 1921 is unconstitutional in so far as it affects tidelands and submerged lands and he has accordingly refused to honor any requests for drilling permits. The agitation against ocean drilling at Rincon was instituted several months ago and it may require years of l'tigation before a fina' decision is reached as to whether the State is prevented from granting tideland drilling permits because they may interfere with navigation, commerce or fishery. The arguments against permitting development work out in the open ocean at Rincon are based almost entirely on sentiment and those attempting to prevent the exploitation of this section of the Rincon Field are experiencing considerable trouble trying to build up a plausible reason to prevent the issuance of drilling permits.

Midway-Sunset

The Republic Petroleum's No. 25 in Section 8-32-23, which came in as a 1,061-bbl. flowing well two weeks ago, is still holding up in good shape, the decline since recompletion being almost negligib'e. The Republic is making preparations to carry several other wells in the Midway-Sunset Field down to the lower sand found at 2,704 feet and actual work will get under way shortly. The Chanslor-Canfield Midway Oil Co. is reconstructing a rig over its No. 29 in Section 8-32-23 and this wel', which is an offset to Republic's No. 25, will be carried down immediately. It should therefore be completed along about the middle of April. The Signal Gasoline Co.'s No. 1 in Section 8-11-23, a recent completion doing 65 bbls. per day on the beam, showed a very satisfactori'y increase during the past week, production having more than doubled. The Franco-Western Oil Co. spudded in its No. 9 at McKittrick and this hole, which is in Section 8-30-22, should be on production in the very near future as exceptionally good time has been made up to date.

Kern River

Drilling operations out along the West Front of the Kern River Field are reflecting the movement under way to curtail the output of this field and while there are sti'l some 15 or 16 drilling projects under way there has been a marked tendency recently to reduce work until a definite decision is reached one way or the other. The Standard brought in No. 21, a new well in Section 15-28-27, during the early part of the past week and it showed an initial pumping of 143 bbls. da'ly from 2,255 feet, the hole having been finished with an 8¾-inch oil string carrying 250 feet of 100 mesh screen. No. 14 in Section 27-28-27, was also completed during the week but it was not actually put on production. The Standard's deep test on the Kraemer property in Section 34-28-27, has just passed the 4,900-foot level and this hole will be carried down to the 6,000-foot level for a conclus've test if necessary. The General Petroleum completed No. 6 Sill in Section 26-28-27, and this new well showed an initial pumping of 125 bbls. dai'y from 2,192 feet. The Brownmoor Oil Co. got its first production on the Kern Front as a result of the completion of No. 2 in Section 16-28-27, and this new well started off pumping 145 bbls. of 14.2 gravity oil daily from 2,660 feet. The Petroleum Securities completed No. 14 in Section 22-28-27, and it showed an initial of 133 bbls. daily from 2,557 feet.

The Hono'ulu Consolidated finished its first new well in the Round Mountain Field since taking over the holdings of the Elbe Oil Co. several months ago and from present indications the company will have two more wells on production within the next 15 days. The Honolulu's new well was No. 79 in Section 18-28-29, which showed a potentiality of 450 bbls. per day from the 2,289-foot level. The absence of pipe line facil'ties precluded continuous production and the well was accordingly shut in immediately after completion. No. 47 in Section 18-28-29 and No. 13 in Section 20-28-29 were also comp'eted during the week, although neither was actually put on production. The Shell made exceptionally good footage in No. 2 Jewett, a recent spud in this area, and this project will probably be on production within the next 10 days, unless drilling operations are temporarily suspended in the meantime. The General Petro'eum successfully finished its second producing project in Granite Canyon section of the Mount Poso Field in Section 21-27-28, and this new producer, No. 9 Glide, like its predecessor, showed substantial production. It was shut in immediately following completion, the pro-

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Year to Date	Same Time Last Year
Crude oil	.....	.....	82,625	11,804	1,348,669	1,660,359
Fuel oil	.....	.....	.....	.....	.....	1,988,349
D'esel and gas oil..	.....	.....	.....	.....	449,739	1,019,661
Gasoline	153,064	21,866	158,059	22,580	2,041,328	1,657,743
Tops	.....	.....	.....	.....	.....	.....
Coastwise—						
Crude oil	465,726	66,532	497,940	71,134	3,303,630	6,351,747
Fuel oil	243,468	34,781	294,759	42,108	3,587,060	3,133,193
Diesel and gas oil..	33,665	4,809	642	92	225,595	53,071
Gasoline	192,306	27,472	191,761	27,394	2,414,704	1,827,189
Kerosene	.....	.....	8,250	1,179	22,865	40,605
Tops	47,500	6,786	.....	.....	124,992	.....
Exports—						
Crude oil	39,125	5,589	39,500	5,643	461,933	727,007
Fuel oil	584,262	83,466	407,280	58,183	5,221,585	6,076,523
Diesel and gas oil..	51,792	7,399	72,511	10,359	577,384	175,938
Gasoline	89,081	12,726	63,489	9,070	926,523	403,822
Tops	.....	.....	.....	.....	.....	.....
Kerosene	.....	.....	87,444	12,492	822,572	573,343

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Crude oil	.....	.....	.....	.....	.....	.....
Fuel oil	.....	.....	.....	.....	.....	.....
Diesel and gas oil..	77,121	11,017	.....	.....	342,425	251,458
Gasoline	.....	.....	.....	.....	330,343	586,100
Tops	.....	.....	.....	.....	.....	.....
Kerosene	.....	.....	.....	.....	.....	.....
Lubricants	.....	.....	.....	.....	69,854	58,110
Coastwise—						
Fuel oil	57,406	8,201	74,994	10,713	815,522	1,310,769
Diesel and gas oil..	10,053	1,436	.....	.....	78,495	134,308
Gasoline	163,685	23,384	66,801	9,543	749,736	1,034,337
Kerosene	5,172	739	25,901	3,700	68,321	30,674
Exports—						
Crude oil	.....	.....	.....	.....	25,029	.....
Fuel oil	.....	.....	.....	.....	448,256	295,851
Diesel and gas oil ..	.....	.....	.....	.....	10,400	.....
Gasoline	113,629	16,233	130,234	18,605	1,021,879	933,050
Kerosene	.....	.....	.....	.....	141,420	249,202
Lubricants	.....	.....	.....	.....	.....	9,120

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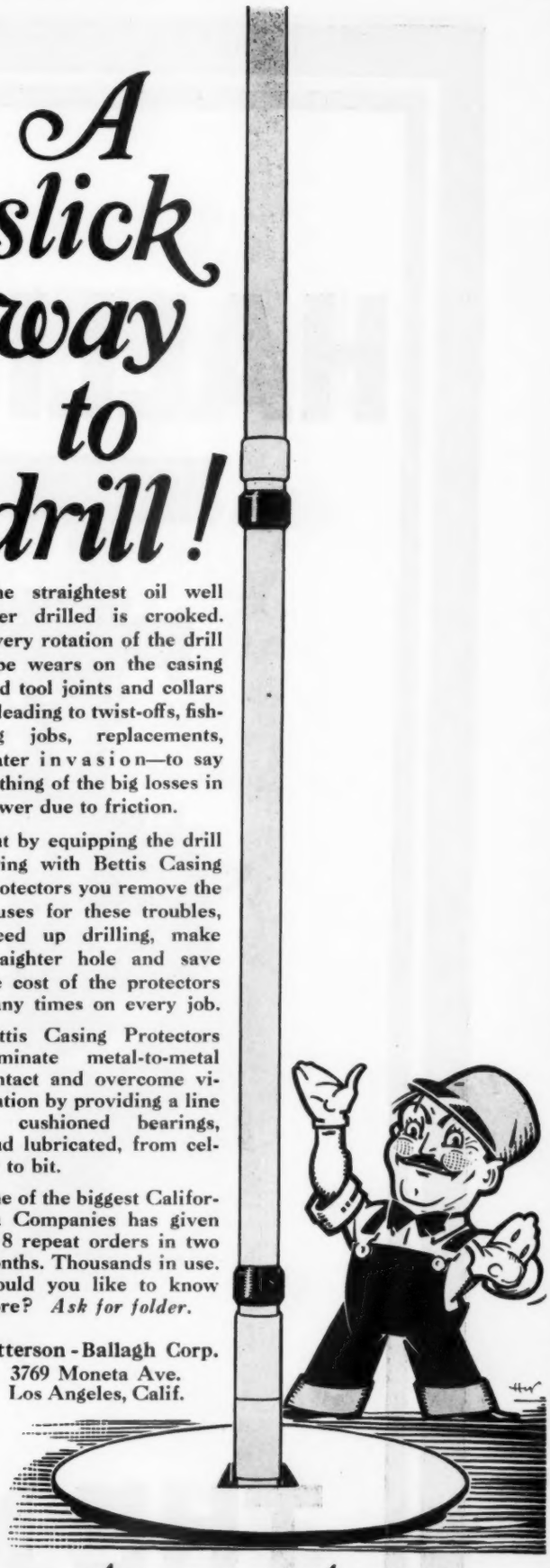

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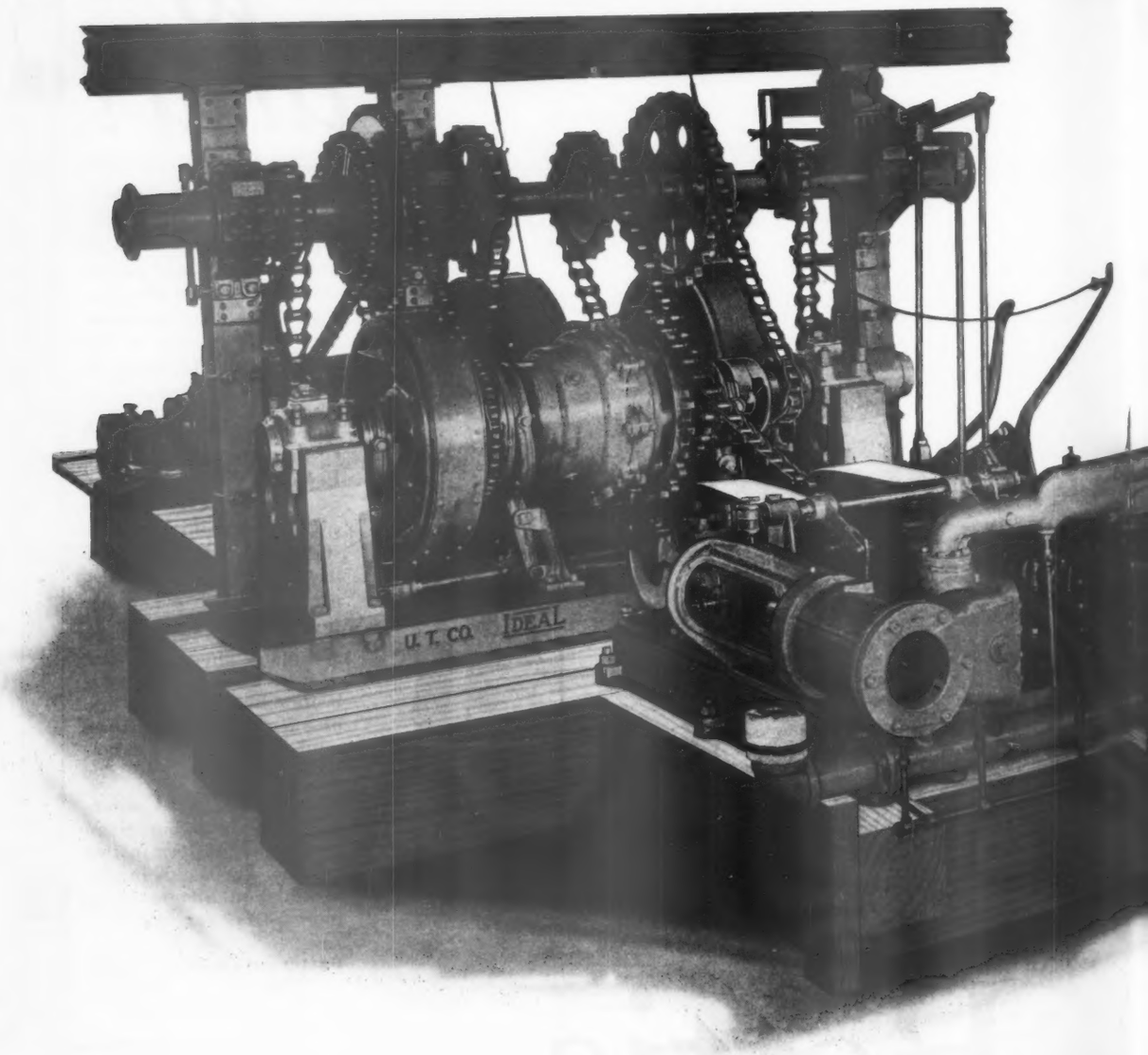

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SUPPLY COMPANIES

duction test showing it capable of making 550 bbls. of clean 15.5 gravity oil daily. The Signal Gasoline Co. will probably complete the next new well in this field as it has resumed drilling on its initial hole which offsets the Union's producer on the Glide property in Section 28-27-28. The California Petroleum has staked a location for a new well in Section 15-27-28, approximately a half mile northeast of the General Petroleum's No. 9 Glide, which is located in Section 21-27-28, and an early spud is contemplated as the company is desirous of proving up a 40-acre lease.

Huntington Beach

There was only one new well finished in the Huntington Beach Field during the past seven-day period, Frank Sanders bringing in his No. 1 Huntington pumping 72 bbls. of 14.3 gravity oil daily from the shallow zone at 2,144 feet. This well is located in the town lot area at Huntington Beach and while additional completions may be anticipated in this area from time to time drilling operations are rather limited in number right now. The Cloud Oil Co. and South Basin Oil Co. each spudded in a new well about a week ago and F. E. Bundy and Paul & Collier are expected to follow a similar procedure within the next few days. Three of these wells will have the shallow zone, located around the 2,100-foot level, as their objective and an early completion can therefore be anticipated. J. A. Brower resumed drilling on his No. 1 Traveler located in the extreme southeastern part of the Huntington Beach Field following the failure to secure commercial production after three unsuccessful cement jobs and the last 100 feet of hole, from 5,380 feet to 5,480 feet, was streaked with oil sand, although the predominating formation was a brown shale. Brower is reaming the hole and will run in a 3-inch oil string for an early production test. The California Eastern Oil Co. has just abandoned nine wells in the shallow Newport Field located a few miles south of the Huntington Beach Field and it is the present intention to quit claim all property holdings in that area. Seven of the nine wells abandoned, Nos. 1, 2, 3, 4, 5 and 6 on the Mesa lease and No. 1-A Strowbridge were former producers although the daily production of 2 bbls. each could never be expected to pay even the lifting cost. The Julian Petroleum, which originally drilled these wells, built a central jack plant at a cost of about $10,000 a year or so ago but its operation was never entirely satisfactory.

Inglewood

The Standard finished a 176-bbl. pumper in the Inglewood Field a few days ago when No. 38 Baldwin was put on the beam at 2,445 feet and this new well, which was finished with a 6⅝-inch oil string carrying 320 feet of 80 mesh screen, is producing clean 18.1 gravity oil. The Brownmoor Oil Co. failed to develop commercial production in the lower zone at Inglewood due to the fact that the property being tested out is not located very favorably with respect to structure, and No. 8, the unsuccessful deep test, is being plugged back for a pumping test in the upper horizon. While commenting on deep tests it might be of interest to mention the fact that the Union is working on a very interesting project in the Dominguez Field at the present time and this hole, No. 17 Callender, which is down 6,258 feet, would undoubtedly throw considerable light on the potentiality of this field if it was given a chance to produce. This hole is being drilled for exploratory purposes only, however, and it is not likely that the company will permit it to flow even for a short preliminary test at this time.

Brea Olinda

Drilling operations in the Brea Olinda and Richfield districts of Orange County indicate the probable completion of some 8 or 10 new wells during the course of the next few weeks. The latter field is scheduled to list the largest number of new wells due principally to the operations of the Union Oil Co. which has one potential producer on the Chapman and three each on the Stern and Y. L. G. leases. The General Petroleum and Standard should also complete new wells in this field shortly. The Shell has one well on the Fisher and another drilling project on the Orange property at Brea Olinda which are scheduled for early completion and both of them should result in favorable production. The Union should finished No. 71 Stearn in this area and the crew from this project will probably be shifted over to No. 13 Naranjal, the rig for which is now in course of construction. The Standard is grading locations for two new wells on the Emery property in the Coyote Field and both of them, Nos. 41 and 42, are scheduled to be spudded in at once.

Northern California Wildcats

Kern County still holds the spotlight as far as wildcatting activities are concerned and this section of the San Joaquin Valley will undoubtedly continue to witness an active, progressive and well-organized wildcatting campaign during the rest of the current year. Fields producing heavy oil will naturally show a smaller amount of development work but with light refinable crude at a premium there will probably not be any let up in the search for new fields of this character. The Pacific Eastern's initial well at Fruitvale is still a consistent pumper doing 170 bbls. per day, although it is quite possible that this well could be changed into a flowing well by deeper drilling as it is producing from only 14 feet of formation at the present time. The Union Avenue wildcat area south of Bakersfield will probably be given another chance to show its potentiality some time during the next few weeks as the Pacific Eastern's No. 2 in this area is reported to be checking out a little lower on the structure than No. 1, which, if correct, should mean an early test. J. E. O'Donnell, who recently spudded in a test in the Greenfield district south of Bakersfield, is expected to have his wildcat in shape for a production test some time within the next six weeks if any favorable indications are logged enroute. O'Donnell is one of the fastest drillers in California and, while it may not always be a wise policy to drill too fast in wildcat territory, he is a capable driller and should not pass up any possibilities. The General Petroleum is still working on its discovery, No. 1 Kerwin in the Edison district, 7 miles southeast of Bakersfield, but the attempt to overcome water trouble has not yet met with success. Leasing activities in the Comanche Point area of southeastern Kern County indicate an increasing amount of interest in the possibilities of this section, although operators are only tying up a limited amount of protective acreage. Some of the major companies have taken protective acreage although their geological departments do not look upon the area with very much favor.

Southern California Wildcats

Wildcatting operations in southern California were devoid of any interesting developments during the past week and the limited amount of prospecting being done does not promise any change for the better in the future. The Shell has set surface pipe in its Hawthorne wildcat which was originally started by J. E. O'Donnell and, while there have not been any showings of exceptional promise this hole should be watched closely during the next 30 days. The Security Ptroleum Co. reported a slight show in its Lynwood wildcat but drilling was resumed without a test. The Monterey Park Oil Co. has resumed work on its wildcat at Monterey Park but it will require several days to clean out the hole following the suspension of several months' duration.

OIL FUEL IN ECUADOR

In order to dispense, as far as possible, with wood as fuel on trains, the Guayaquil & Quito Railway Co. are erecting, at Rio Bambo, Province of Chimborazo, Ecuador, a large petroleum storage tank with a capacity of 100,000 gallons. A second tank, with a capacity of 50,000 gallons, will be constructed shortly at Ambato, capital of the Province of Tunguragua, and a third, of 20,000 gallons, in the railway yard at Quito.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

Tonkawa Development Co.'s No. 1 McDaniels, SE cor. SE Sec. 15-25-1w ..... 500,000 ft. gas; 3,980-88 ft.; shut down 4,475 ft.

Corley and others' No. 1 Williams, SE cor. NE SW Sec. 7-21-1w ..... Shut down for casing 1,930 ft.

WOODWARD COUNTY

Otstot Development Co.'s No. 1 Simmons, SE cor. SE Sec. 32-24-17w ..... Shut down for pipe 1,430 ft.

Wight & Wahl's No. 1 Williams, C NW Sec. 16-23-20w ..... Rig.

Randau & Mooney's No. 1 Parker, SE cor. NE, NW Sec. 4-23-16w ..... Shut down 1,092 ft.

Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25-21-21w ..... Shut down 2,772 ft.

Burgoyne Brothers' No. 1 Barnes, SW cor. SE NE Sec. 15-21-19w ..... Drilling 700 ft.

Wight & Wahl's No. 1 James, C NW, Sec. 16-23-20w ..... Rig.

GARFIELD COUNTY

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w ..... Hole full water 4,650 ft., shut down 4,720 ft.

Falling et al's No. 1 Gorsuch, SE cor. SE, Sec. 14-24-3w ..... Drilling 4,745 ft.

Fleming and others' No. 1 Wengert, NW cor. NW Sec. 3-22-5w ..... Shut down 750 ft.

Beopple and others' No. 1 Schweer, C SW NE Sec. 12-21-4w ..... Shut down 1,850 ft.

Marland and Barnsdall's No. 1 Looman, NE SE Sec. 9-20-4w ..... Fishing 5,740 ft.

Marland Oil Co.'s No. 1 Miller, SW cor. SW Sec. 12-20-4w ..... Shut down 4,586 ft., waiting on test Sec. 9-20-4w.

ELLIS COUNTY

Oklahoma Northern's No. 1 Young, NW cor. NW Sec. 9-21-25w ..... Fishing 300 ft.

Hoffman and others' No. 1 Ottes, NW cor. NE Sec. 20-15-8w ..... Rig blown down.

NOBLE COUNTY

Barnsdall Oil Co.'s No. 1 Bumberger, NE cor. NW SE Sec. 11-21-1 ..... Cellar.

KINGFISHER COUNTY

Slick & Harrington's No. 1 Cromer, SE cor. NE NE Sec. 25-19-5w ..... Location.

H. H. Morgan's No. 1 Buscon, SW cor. SE NE Sec. 30-16-9w ..... Shut down 1,610 ft.

Galt-Brown Oil Co.'s No. 1 Wolff, NW SE Sec. 6-16-7w ..... Drilling 1,560 ft.

McKinney & Crawford's No. 1 Sturgeon, NE cor. SW Section 27-16-6w ..... Drilling 3,985 ft.

Wiley & Manahan's No. 1 Johnson, C NW Sec. 26-16-5w ..... Drilling 4,445 ft.

Reiter-Foster Oil Co.'s No. 1 Unknown, SW cor. SE Sec. 23-15-5w ..... Rig.

LOGAN COUNTY

Champlin Refining Co.'s No. 1 Clark, SE cor. SW Sec. 8-19-4w ..... Drilling 4,872 ft.

Sinclair Oil & Gas Co.'s No. 1 Webber, SE cor. SE Sec. 18-19-4w ..... Drilling past pipe 4,500 ft., total depth 4,808 ft.

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-13-15w ..... Drilling 1,400 ft.

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w ..... Underreaming 3,750 ft.

Garber & Pulse's No. 1 Widdoes, NE cor. SE NW Sec. 32-18-3w ..... Shut down 1,200 ft.

T. B. Slick's No. 1 Bryan, SW cor. SE Sec. 28-17-1 ..... Plugging back to sand 5,630 ft.

Willis and others' No. 1 Sweezy, SW cor. NW SE Sec. 20-17-3 ..... Shut down 4,677 ft.

W. R. Ramsey's No. 1 McMillan, NW SW Sec. 24-15-3w ..... Hole full of water 4,507-4,517 ft., shut down for orders.

Bu-Vi-Bar's No. 1 Kirkpatrick, NE SW SW Sec. 12-15-1w ..... Shut down 4,504 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down.

MUSKOGEE COUNTY

Finefield and others' No. 1 Jobe, NE cor. NW SE Sec. 12-15-18 ..... Drilling 1,270 ft.

J. R. Parks No. 1 Beuge, CWL NE NW Sec. 13-15-19 ..... Drilling 769 ft.

Elk Drilling Co.'s No. 1 Jones, SW cor. SW Sec. 34-13-17 ..... Spudded and shut down.

L. T. Haney's No. 1 Mitchell, SE cor. NW SE Sec. 33-13-18 ..... Drilling 1,675 ft.

Rolestone and others' No. 1 Hixon, CNL SE NE Sec. 1-13-19 ..... Drilling 1,900 ft.

OKLAHOMA COUNTY

Cromwell Oil & Gas Co.'s No. 1 Proctor, C SE Sec. 21-14-3w ..... Shut down 4,075 ft.

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w ..... Rigging up standard tools and shut down 3,800 ft.

Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-3w ..... Fishing 6,840 ft.

Cromwell & Franklin's No. 1 Gross, SW cor. NE SW Sec. 22-10-2w ..... Shut down 4,702 ft.

CREEK COUNTY

Lima O. & G. Co.'s No. 1 Grayson, NW cor. NE NE, Sec. 11-14-7 ..... Shut down 3,650 ft.; will probably abandon.

CANADIAN COUNTY

T. B. Slick and others' No. 1 Pazowrech, NW SE Sec. 29-13-5w ..... Hole full of water 4,338-4,452 ft., shut down 4,580 ft.

Ramsey Brothers' No. 1 Newman, CSL NE Sec. 9-11-7w ..... Drilling 4,400 ft.

LINCOLN COUNTY

Bu-Vi-Bar Petroleum Co.'s No. 1 School Land, C NE SE Sec. 16-13-4 ..... Shut down 4,500 ft.

OKFUSKEE COUNTY

Prairie Oil & Gas Co.'s No. 1 Gray, SW cor. SW Sec. 19-11-7 ..... Drilling 4,800 ft.

Moose & Daniels' No. 1 Stidham, SW cor. NW Sec. 4-11-10 ..... Shut down 622 ft.

SEQUOYAH COUNTY

Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Rigged up and shut down.

Citizens Gas Co., No. 1 Greenstreet, SW cor. NE SE Sec. 33-12-27 ..... Rig.

POTTAWATOMIE COUNTY

Shaffer-Kilgore-Sykes' No. 1 Ives, C SE SE Sec. 12-10-3 ..... Drilling 5,137 ft. in Mayes.

Prairie Oil & Gas Co.'s No. 1 Lumbley, SW NW SE Sec. 1-10-5 ..... Dry and abandoned 4,780 ft.

Central Commercial Oil Co.'s No. 1 McCrain, NW cor. NE SW Sec. 16-10-5 ..... Dry and abandoned 4,791 ft.

Superior Oil Co.'s No. 1 Herminghausen, SW cor. NW NE, Sec. 24-8-2 ..... Drilling 4,276 ft.

Davy & Detrick's No. 1 McGehee, SW SE NW Sec. 10-6-2 ..... Fishing 4,998 ft.

Amerada Pet. Corp.'s No. 1 Gravel, SW SE NE, Sec. 1-8-4 ..... Rigging up standard tools 4,102 ft.

CADDO COUNTY

Magnolia Petroleum Co's No. 1 Shelby, SW cor. SW Sec. 28-10-12w ..... Drilling 2,207 ft.

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ..... Shut down 150 ft.

W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.

OSAGE COUNTY

Indian Terr. Ill. Oil Co.'s No. 1, SE cor. NE Sec. 8-25-7... Dry and abandoned 3,175 ft.

Prairie Oil & Gas Co.'s No. 1, SE cor. NE Sec. 11-24-6.... Shut down 3,084 ft.

Devonian Oil Co.'s No. 1, NW cor. SE Sec. 18-22-8..... Sand 2,260-2,315 ft., 4,000,000 ft of gas went to water; probably abandoned.

SEMINOLE COUNTY

T. B. Slick's No. 1 School Land, SE cor. SE Sec. 16-6-5... Drilling 600 ft.

Roxana and Barnsdall's No. 1 Stidham, NW cor. NE Sec. 6-10-7 ..... Location.

Prairie Oil & Gas Co.'s No. 1 Davis, NE SE Sec. 21-10-7. Rig.

Prairie Oil & Gas Co.'s No. 1 Varnum, NW cor. SW SW Sec. 5-9-6 ..... Drilling 4,295 ft.

The Texas Company's No. 1 Reed, SW cor. SW Sec. 12-8-5 ..... Wilcox sand 4,720 ft; hole full water; probably will abandon.

Twin State Oil Co.'s No. 1 Walker, NE cor. NE Sec. 5-7-6 ..... Rig on ground.

Simon & Bean's No. 1 Palmer, SE cor. NW NE Sec. 7-7-6 ..... Rigged up and shut down.

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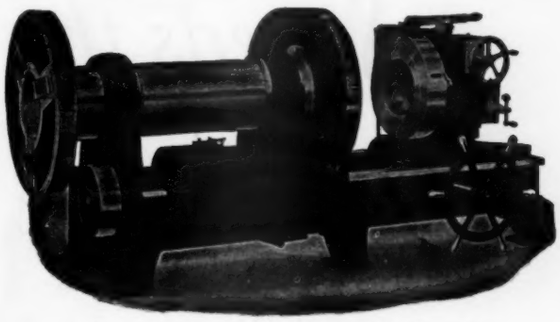

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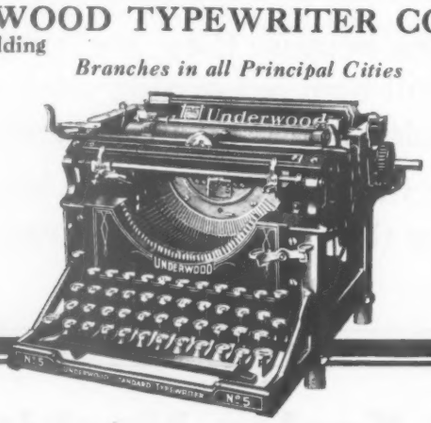

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Selter-Foster Oil Co.'s No. 1 Coat, SW cor. NW SW Sec. 14-7-6 ..... Spudding.
Indian Territory Illuminating Oil Co.'s No. 1 Marshall, NW NW SW Sec. 32-7-7 ..... Drilling 4,769 ft.
Magnolia Petroleum Co.'s No. 1 Vierson, SE SE NW Sec. 5-6-7 ..... Drilling 3,720 ft.
Gardner Petroleum Co.'s No. 1 Unknown, NW cor. SE Sec. 36-6-7 ..... Shut down 3,015 ft.
Fuhrman Petroleum Co. and Superior Oil Co.'s No. 1 Davis, SW SW SE Sec. 3-10-6 ..... Location.

BECKHAM COUNTY

C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w ..... Shut down 3,800 ft.
Pfeiffel and others' No. 1-A Carter, NE cor. NE Sec. 35-8-22w ..... Shut down 300 ft.

GRADY COUNTY

Remington and others' No. 1 Fryrear, SW SW NE Sec. 13-3-5w ..... Shut down 720 ft.; may start up soon.
Bedner and others' No. 1 Willis, C SW NW Sec. 13-7-5w ..... Shut down 2,450 ft.
Nichlos & Page's No. 1 Drake, SE NE SE Sec. 7-5-7w ..... Shut down 1,900 ft.
Wirt Franklin Petroleum Co.'s No. 1 Garden, SE cor. SW NE Sec. 1-4-7w ..... Sand 2,003-12 ft.; 1,000,000 ft. gas.
Commercial Development Co.'s No. 1 Chrisman, C NE NE Sec. 21-4-7w ..... Spudded.
Magnolia Petroleum Co.'s No. 1 Pursley, SE SW NW Sec. 8-4-6w ..... Shut down 3,905 ft.

MINTOSH COUNTY

Marlone Oil Co.'s No. 1 Sanders, NW cor. NE SW Sec. 10-9-18 ..... Shut down 2,250 ft.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Shut down 2,975 ft.

KIOWA COUNTY

A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w ..... Shut down 1,127 ft.

PONTOTOC COUNTY

Gillespie & Gant's No. 1 Taylor, SW SW SE Sec. 12-5-4 .. Sand 2,818-52 ft., water; plugged back 2,570 ft., shot 80 and 20 quarts; swabbed 29 bbls.; shut down
T. B. Slick's No. 1 Barnett, NE SE NW Sec. 13-5-6 ..... Bad hole, 3,916 ft.
Sinclair Oil & Gas Co.'s No. 1 McDaniel, NE cor. NE Sec. 17-5-6 ..... Drilling 3,620 ft.
Mid-Continent Petroleum Corp.'s No. 1 Harjo, SE NE NE Sec. 14-5-7 ..... Sand 2,618-22 ft., 10,000,000 ft. gas.
T. B. Whitney and others' No. 1 Moore, SW cor. SE Sec. 17-5-9 ..... Shut down 2,654 ft.
Winkler and others' No. 1 Tiner, C SW SE Sec. 31-5-9... Shut down [illegible]
Dixie Oil Co.'s No. 1 Perkins, SE NW Sec. 15-4-1 ..... Drilling 4,720 ft.
R. F. Garland's No. 1 Strickland, SW NW SW Sec. 10-4-3 ..... Shut down 2,650 ft.
Marland Oil Co.'s No. 1 Lawrence, C SW SE Sec. 10-4-4.. Drilling 1,790 ft.
C. J. Shervin and others' No. 1 Wright, NW NE NE Sec. 13-4-6 ..... Shut down 1,925 ft.
Boles and others' No. 1 Rayburn, SW SE Sec. 35-4-6 .... Shut down 1,340 ft.
J. E. Crosbie's No. 1 Nowabbi, SE NE SW Sec. 8-4-7..... Testing sand 1,044-54 ft.; show oil, estimated 60 bbls. day.
Texas-Pacific Coal & Oil Co.'s No. 1 Stewart, C SW SE Sec. 11-5-8 ..... Drilling 2,260 ft.
Henry and others' No. 1 Gregg, SW SE NW Sec. 14-4-7... Shut down 1,090 ft.
Oklahoma Portland Cement Co.'s No. 1 Mathews, C SW NW Sec. 24-4-7 ..... Drilling 1,780 ft.

GARVIN COUNTY

Magnolia Petroleum Co.'s No. 1 Vaughn, NW SW NW Sec. 12-3-1 ..... Drilling 5,062 ft.
Heath & Bauman's No. 1 Hattell, SW SE SW Sec. 10-3-3 ..... Shut down 1,640 ft.

COMANCHE COUNTY

Jolly-Org Oil Co.'s No. 1 Neeley, SE NE Sec. 24-3-10w.... Drilling 2,370 ft.
Ashcraft and others' No. 1 School Land, SE cor. SE Sec. 20-2-10w ..... Broken sandy lime 822-954 ft.; swabbed 3 bbls.; total depth 975 ft.; shut down; material moved out.
Jenkins and others' No. 1 Smith, SW cor. SE SE Sec. 34-1-10w ..... Shut down 1,530 ft.
Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w.. Cleaning out 3,310 ft.

COAL COUNTY

Revels & Magee's No. 1 Labor, NW cor. NW Sec. 17-1-2.. Shut down 240 ft.
McGraw and others' No. 1 Patton, SW SE NE Sec. 35-1-8 ..... Shut down 973 ft.
Indian Territory Illuminating Oil Co.'s No. 1 Harris, SW cor. NW Sec. 10-1-11 ..... Fishing 1,630 ft.

OKLAHOMA PANHANDLE
CIMARRON COUNTY

Phillips and others' No. 1 Unknown, NW cor. NW Sec. 24-6-2 ..... Shut down 4,340 ft.
Sinclair Oil & Gas Co.'s No. 1 School Land, NW cor. NW Sec. 22-5-2 ..... 4,872 ft., will plug.
Ramsey Brothers' No. 1 School Land, NE SW SW Sec. 21-5-5 ..... Drilling 3,755 ft.
Ramsey Brothers' No. 1 Unknown, NW NE Sec. 27-5-5... Shut down 4,100 ft.
Ramsey Brothers' No. 1 School Land, SE SE Sec. 34-4-1.. Drilling 3,850 ft.
Gladys-Belle Oil Co.'s No. 1 Iserial, SW NE Sec. 25-3-7... Plugging 4,392 ft.
Valerius & Wilkinson's No. 1 Unknown, SE cor. NE Sec. 25-3-7 ..... Drilling 2,545 ft.
H. F. Wilcox Oil & Gas Co.'s No. 1 Zea, NE SW Sec. 28-3-13 ..... Shut down 3,765 ft.
Skaer and others' No. 1 Mathis, SW NE NE Sec. 17-3-23.. Shut down 3,227 ft.
Ross Fenton and others' No. 1 Graves, NE NE Sec. 2-2-9.. Spudded and shut down.

TEXAS COUNTY

Danner Oil Co.'s No. 1 Graves, NE cor. SW SW Sec. 23-2-18 ..... Shut down 700 ft.
Newsom and others' No. 1 Allison, SE SE Sec. 4-1-12..... Shut down 4,040 ft.
Dotton and others' No. 1 Baker, C NW Sec. 4-1-13 ..... Rig blown down.
H. & H. Oil Co.'s No. 1 Hitch, NE cor. NE, Sec. 26-1-15... Shut down 600 ft.
Three Way Oil Co.'s No. 1 Cane, SW NW Sec. 11-1-18.... Hole full of water at 3,318-58 ft.; shut down.
Conley and others' No. 1 Unknown, SE cor. NW Sec. 5-1-19 ..... Spudded and shut down.
Texas County Gas Co.'s No. 1 Bacon, C NE NE Sec. 17-3-15 ..... Show gas 2,630-37 ft.

SOUTHERN OKLAHOMA
BRYAN COUNTY

Green Oil & Ref. Co.'s No. 1 Kemp, SE cor. NW NW Sec. 28-8s-9 ..... Shut down 600 ft.
Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Shut down 1,425 ft.

JEFFERSON COUNTY

J. R. McCoy and others' No. 1 Smith, SE cor. NW Sec. 14-7s-6w ..... Rigged up and shut down.
W. Bassett's No. 1 Johnson, NE NW Sec. 16-6-8w ..... Location.
Amerada Petroleum Co.'s No. 1 Emerson, NW cor. SE SW Sec. 28-5s-8w ..... Rigging up.

CHOCTAW COUNTY

Hugo Gay's No. 1 Smith, SE cor. SW NW Sec. 27-5s-16... Shut down 1,540 ft.
Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

TILLMAN COUNTY

A. N. Pearson's No. 1 Mounts, SW cor. SW Sec. 3-5s-15w.. Rig.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w ..... Shut down 2,350 ft.

MARSHALL COUNTY

Laurel Oil & Gas Co.'s No. 1 Chas.ine, SE NW Sec. 26-4s-5 ..... Shut down 3,145 ft.
Magnolia Petroleum Co.'s No. 2 Marshall, SW cor. NW SW Sec. 26-5s-7 ..... Drilling 600 ft.
Alter and others' No. 1 Brown, NE cor. NW NW Sec. 11-4-6 ..... Drilling 218 ft.

STEPHENS COUNTY

Pierce & Brown's No. 1 Garland, SE NW NE Sec. 34-2s-6w ..... Shut down 1,700 ft.

JOHNSTON COUNTY

McPherson and others' No. 1 Wyand, CSL NE NW Sec. 7-2s-9 ..... Shut down 4,440 ft.
Wapanucka Oil Co.'s No. 1 Banks, Sec. 28-2s-9 ..... Shut down 1,530 ft.

CARTER COUNTY

Grooms and others' No. 1 Morris, CSL NW NE Sec. 19-1s-2w ..... Shut down 3,463 ft.

MURRAY COUNTY

Thompson Oil Co.'s No. 1 Freeman, SE cor. Sec. 27-1s-2.. Rig.
Gilcrease Oil Co.'s No. 1 Wolf, SE cor. NE Sec. 20-1-2.... Spudded and shut down.

Inspecting Core Recovered in Oil Drilling in Montana

Facts Worth ≈ Considering

IF you have structure tests which need to be made or contemplate wildcat drilling on a block of options, you are naturally interested in methods which get the best results at reasonable cost.

Longyear diamond core drilling quickly locates key horizons. The elevations thus secured make it possible to map your structure conditions with greater certainty than is possible by any other means.

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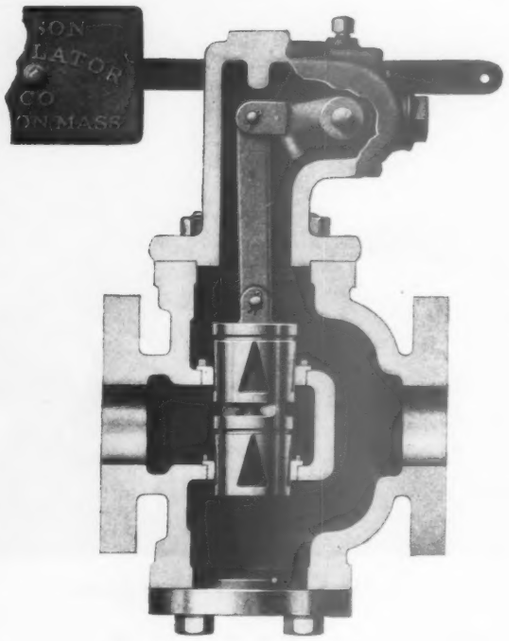

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1801

KANSAS WILDCATS

(Continued from Page 44)

Eureka Oil Co.'s No. 1 Brothers, SE cor. NW Sec. 35-23-11 ..... Drilling 2,489 ft.
C. A. Devine's No. 1 Bradford, SW cor. NE Sec. 22 26-11 ..... Shut down 600 ft.
C. E. Hawk's No. 1 Lessman, SE cor. SW Sec. 14-21-10... Dry and abandoned 2,197 ft.
R. H. Hood and others' No. 1 Butler, C SE SE Sec. 15-26-11 ..... Sand 608-627 ft.; 2,000,000 ft. gas; completed.
T. C. Johnson's No. 1 Knox, NE cor. NW Sec. 8-23-13.... Shut down 1,705 ft.
Kismet Oil Co.'s No. 1 Richardson, SW cor. NE SW Sec. 26-22-11 ..... Location.
Sharpless and others' No. 1 Corder, SW cor. SE SE Sec. 22-23-12 ..... Shut down 1,310 ft.
Smith & Rockhill's No. 1 McDair, NW cor. SE Sec. 20-26-12 ..... Dry and abandoned 1,903 ft.

HARPER COUNTY

Barbara Oil Co.'s No. 1 Blunk, C NW NE Sec. 20-34-13w.. Drilling 1,800 ft.
Amerada Pet. Corp.'s No. 1 Mendiville, C SE SE Sec. 24-34-6w ..... Drilling 4,865 ft.
Sam Jarvis' No. 1 Wyckoff, SW cor. NW Sec. 11-34-4w.. Drilling 4,420 ft.
Sam Jarvis' No. 1 Warneke, SE cor. SW Sec. 4-34-3w... Shut down 4,207 ft.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and shut down.

KINGMAN COUNTY

James Madison's No. 1 Ballein, SW cor. NW NW Sec. 21-28-5 ..... Drilling 3,610 ft.

LANE COUNTY

Robinson and others' No. 1 Dickerson, SW cor. NW SE Sec. 11-18-27w ..... Shut down 2,625 ft

LINCOLN COUNTY

Pioneer Oil Co.'s No. 1 Chase, SE cor. SE Sec. 10-12-7.... Rig on ground.

LOGAN COUNTY

W. H. Koons', Trustee, No. 1 Edwards, NW cor. NW Sec. 14-14-33w ..... Corrected to 3,855 ft., dry and abandoned.

MARION COUNTY

Anderson Brothers' No. 1 Benth, SE cor. SW SW Sec. 31-18-5 ..... Drilling 2,396 ft.
Franks et al's No. 1 Wright, SW cor. NW NW Sec. 9-19-4 ..... Rig.
Givens and others' No. 1 Ucker, SW cor. NE Sec. 31-17-4 ..... Underreaming 1,820 ft.
Graham Bros.' No. 1 Nelson, NE cor. SE Sec. 20-17-5... Drilling 1,814 ft.
T. C. Johnson's No. 1 Thompson, SW cor. NE Sec. 26-17-4 ..... Shut down 1,655 ft.
Sun Ray Oil Co.'s No. 1 Lehrman, SW cor. NE SE Sec. 1-21-4 ..... Drilling 2,875 ft.
Shearer & Reardon's No. 1 Strouse, SW cor. NW NE Sec. 14-18-4 ..... Rig.

MEADE COUNTY

Blackwell Oil & Gas Co.'s No. 1 Beyer, SE cor. NW SE Sec. 9-33-28w ..... 8-in. casing 3,205 ft.; total depth 3,315 ft.; shut down.

MORRIS COUNTY

Cress & Hawley's No. 1 Grendier, NW cor. SE Sec. 16-15-5 ..... Drilling 1,050 ft.
Hugh Faulder's No. 1 Wendt, SW cor. SE SE. Sec. 18-15-5 ..... Rig.
Fisher & Louck's No. 1 Stroda, NW cor. SE Sec. 6-16-5 ..... Underreaming 2,367 ft.
Franks & Farrell's No. 1 Wendland, SW cor. SE NE Sec. 20-16-5 ..... Rig.
Graham Brothers' No. 1 Nelson, NE cor. SE Sec. 30-17-5 ..... Drilling 1,420 ft.
Matthews and others' No. 1 Walters, SW cor. NE Sec. 14-16-5 ..... Spudded and shut down.
Moss & Nelson's No. 1 Smith, SW cor. SW Sec. 18-16-5... Rig.
Skelton and others' No. 1 Iles, NW cor. NW Sec. 25-16-5 ..... Rig.

McPHERSON COUNTY

Phillips Petroleum Co.'s No. 1 Wrigh., SW cor. NW NW Sec. 9-19-4 ..... Rig.
D. I. Hall's No. 1 Gray, NW cor. SE NW Sec. 20-20-3w.. Spudded and shut down.
John Heron's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w... Rig.
C. W. Lamer's No. 1 Lamer, SE cor. SW Sec. 1-17-3w... Underreaming 3,495 ft.
Girley & Lamer's No. 1 Paulsen, SE cor. NW Sec. 6-19-2w ..... Rig.
The Texas Company's No. 2 Chinberg, NE cor. NE NW Sec. 32-18-2w ..... Drilling 2,310 ft.
Danciger Oil Co.'s No. 1 Willem, NW cor. SE SE Sec. 6-22-4w ..... Rig and tools.

OSBORNE COUNTY

Prather-Davis-Krueger's No. 1 Pruter, SW cor. SE Sec. 30-9-15w ..... Shut down 2,360 ft.

PAWNEE COUNTY

Frank Hopper and others No. 1 Seifers, NW cor. SW NE Sec. 23-21-11w ..... Drilling 4,038 ft.
F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w ..... Shut down 1,700 ft.

POTTAWATOMIE COUNTY

J. J. Crawford's No. 1 College, CWL SW NE Sec. 11-10-12 ..... Shut down 2,250 ft.

RENO COUNTY

Danciger Oil & Refining Co.'s No. 1 Williams, NW cor. SE SE Sec. 6-22-4w ..... Moved in tools.
Stearns-Streater & Marshall's No. 1 Crabb, SE cor. SW NE Sec. 1-25-8w ..... Rig.

RICE COUNTY

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w ..... Cellar.

RILEY COUNTY

Mutual Oil Co.'s No. 1 Marks, SE cor. NE NW Sec. 26-10-6 ..... Shut down 2,400 ft.

ROOKS COUNTY

Keys Petroleum Co.'s No. 1 Rathburn, NE cor. SW Sec. 14-9-16w ..... Drilling 2,975 ft.
Krueger and others' No. 1 Poore, NE cor. NE Sec. 14-8-16w ..... Spudded and shut down.
Stearns & Streather's No. 1 Matheson, NE cor. SE NW Sec. 28-10-16w ..... Drilling 3,462 ft.

RUSH COUNTY

Valerious & Chenney's No. 1 Sheverman, NW cor. SE NW Sec. 27-17-17w ..... Spudded and shut down.

SALINE COUNTY

Cress & Hawkey's No. 1 Grendier, NE cor. SE Sec. 16-15-5 ..... Rig.
Hugh Faulder's No. 1 Wendt, SW cor. SE SE Sec. 18-15-5 ..... Rig.
Mente Oil & Gas Co.'s No. 1 Muir, SW cor. SW Sec. 17-15-2w ..... Underreaming 3,205 ft.

SEDGWICK COUNTY

Gypsy Oil Co. and others' No. 1 Wright, SE NE SE Sec. 12-26-1w ..... Rig.

SEWARD COUNTY

T. B. Slick's No. 1 Pyle, NE cor. NE Sec. 14-33-33w.... Drilling 2,965 ft.

SHERMAN COUNTY

A. L. Henson and others' No. 1 Murry, NE cor. SE NW Sec. 22-7-4w ..... Shut down 2,650 ft.

SMITH COUNTY

Smith & Buchner's No. 1 Rice, SW cor. SW Sec. 18-5-15w ..... Rig.

STRATFORD COUNTY

Randall-Johnson's No. 1 Richardson, NW cor. SW Sec. 24-22-11w ..... Spudded and then abandoned.
Kismet Oil Co.'s No. 1 Richards, SW cor. NE SW Sec. 24-22-11w ..... Location abandoned.

SUMNER COUNTY

Otstot and others' No. 1 Barlow, SE cor. SE Sec. 22-23-3w ..... Shut down 1,860 ft.
Gypsy Oil Co.'s No. 1 Douglas, NE cor. SE NW Sec. 23-34-2w ..... Top Wilcox, 4,493 ft.; total depth 4,500 f.; estimated 200 bbls.; shut down.

TREGO COUNTY

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w ..... Spudded and shut down.

WABAUNSEE COUNTY

Empire Gas & Fuel Co.'s No. 1 Schuaem, SE cor. SE Sec. 19-12-11 ..... Fishing 3,320 ft.

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Titusville Iron Works	Titusville, Pa.
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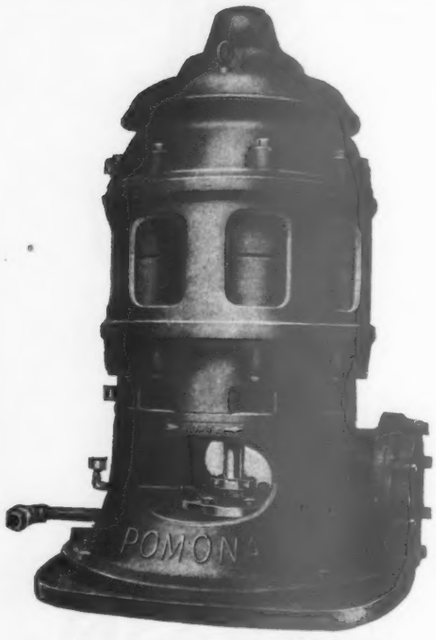

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By means of water lubrication in Pomona Pumps no oil is required to lubricate the bearings. Water is used instead of oil. Therefore oil cannot intrude, assuring a clean, undefiled water supply which is absolutely essential. Water lubrication also reduces vibration, prevents sand from cutting the bearings and adds years to the Pump's life.

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Pomona Mfg. Co., Pomona, Calif.
Builders of Pumping Equipment Since 1902

Pomona Centrifugal Turbine Pumps

FOURTH TEST OPENED SORRENTO DOME POOL

(Continued from Page 34)

used for 10 or 12 years. The pit and a two-story commissary house, the latter having been turned into a boarding and bunk house for the Gulf's men, were two things left behind by lumbermen who worked through that territory years ago. The old saw mill itself burned years ago.

Saw Mill Pit for Storage

The earthen pit, roughly, is about 500 feet long and 100 feet wide at the widest point and will hold, according to engineer's calculations approximately 100,000 bbls. About half that amount already has been turned into the pit since the No. 4 was opened early in February.

Although 3,100 feet of 6-inch flow line had to be laid, this was accomplished with very little difficulty despite the swamp, through which it had to go. For the most part the line was laid temporarily along the surface and the only inconvenience was the discomfort of the men wading around in the mulky mire from knee to waist deep.

Since the bringing in of the well, five small steel tanks have been erected in a clearing about 600 feet south of the discovery well on a bit of high ground and while the writer was on the ground pipe line layers were finishing connecting up a line from the well and were getting ready to rush a line from No. 5.

All tests so far drilled have been on locations on soft ground covered with water, which rises and falls with tides and back water from Lake Pontchartrain, which is 25 to 30 miles distant. However, very little trouble has been experienced in building derricks other than a little extra reinforced piling foundation at corners. Because of the comparative shallow depths of drilling, the heavy timber foundations have been strong enough for all operations.

The principal difficulty encountered was in getting to the locations. A plank road had to be built from the camp to the first test and from there these roads also had to be extended to the various other tests as other locations were made. These roads consist of heavy timbers laid down lengthwise and covered crosswise with 4 by 12 planks. To accomplish this trucks carrying the lumber had to be backed in and the road laid ahead as the crews slowly cut their narrow path through the underbrush. The timber and lumber for these roads was shipped from the lumber town of Sorrento to McElroy and then trucked into the field.

Quick Drilling Time

Drilling in the Sorrento Dome has been extremely "soft picking" for the Gulf with the cap rock pay shallow and the formations soft. Including the time required in laying a board road from one location to another, a test can be rigged up and drilled within 30 days. Two strings of casing have been set in each the No. 4 and the No. 5, the first, a 10-inch surface string, being set a little below 1,100 feet, and the second, 6⅝-inch, on the cap rock.

The field has another very important advantage. If a prolific field is developed it is only 7 miles from the Mississippi River, where terminals, accessible to tankers can be built for handling the oil. This will provide a ready and cheap water rate market for the oil.

The company has been delaying any plans for a line to the river and a tank farm there pending the drilling of additional wells to determine the possible extent of production. Operating conservatively, the company does not want to go to too much outlay on the strength of only one or two wells, despite wild rumors carried in some daily newspapers.

Another point in favor of the company is that it owns the entire acreage around the dome, having a solid block of more than 5,000 acres. Most of this is leased from the United Land Co. This will permit the drilling of only necessary tests and will enable the Gulf to test the dome at will.

Finding of the cap rock production on the Sorrento Dome makes the field appear all the more favorable. Although the pool is difficult to find, cap rock fields so far have paid off rapidly by very prolific production, like at Spindletop, Sour Lake and Humble, Tex. Big production off the various sides or flanks of the Sorrento Dome also is possible, and probable, as at Spindletop, but this usually does not offer such profitable returns. The Gulf, for the time being, will attempt to develop only the cap rock oil.

Dome Is Peculiar

The Sorrento Dome is one of the most peculiar yet found in the Gulf Coast, according to Gulf Refining Co. officials. The dome is unusually small, according to seismograph calculations, and also it is believed to be very broken with many irregularities in its contour. Also, unlike other domes, the cap rock production has been found at the bottom of the rock instead of at the top. The Sorrento cap was absolutely dry at the top and was penetrated for 20 feet before there was any showing of oil or gas. The No. 4 well was completed at the very lower stratum of the cap rock.

Also distinctive at Sorrento is the fact that it is making no water. All other cap rock production so far on record has been accompanied by or else soon started making heavy flows of water. Except for short periods, Sorrento oil has been free of water and only when opened through large chokes does it show b.s., and then little more than 4 per cent. The oil tests 26.5 gravity. No complete distillation tests have been made but an early sample showed no gasoline content, and very little naphtha. The sample was not run down for lubricating oil value.

The only time the well made any great amount of water was after it was opened following the two weeks shut down for laying of a line to the oil pit. It started off flowing upwards of 10,000 bbls. of fluid, of which it was estimated about 40 per cent or more was water and sediment. After trying various chokes, the water stopped and the well flowed at the rate of about 6,000 bbls. of which only about 4 per cent was sediment and no water, through a 1¼-inch choke. Cutting this choke down, the well has been making only pipeline oil, lately from 1,200 to 1,500 bbls. daily.

The development at Sorrento has been under the supervision of W. C. Clemons, general field superintendent of production, with Joe Caddell, field superintendent at the field. To Mr. Caddell goes the distinction of being the driller who brought in the discovery well and partly in recognition of this he was made field superintendent when the well was completed. He personally drilled each of the first four tests but on No. 5 he was succeeded by Ludie Williams, night driller on the others.

As many as 55 men at a time have been on the payroll of the Gulf Refining Co. at the Sorrento Dome Field, although only about 30 are boarded at the camp now. The extra men were required at various times in clearing underbrush and trees, laying roadway and doing other general work there. The present force includes a small pipeline crew to lay the field lines.

Although Gulf Refining Co. has been given the credit of opening the Sorrento Dome Field, it is of interest to know that this company was not the first oil company in that district. Several years ago, Rycade Oil Corp. held practically all the acreage and drilled two tests on a knoll some distance to the east of where the Gulf's wells now are. When these were abandoned as dry, Rycade released its holdings and the Gulf went in and "shot" the dome.

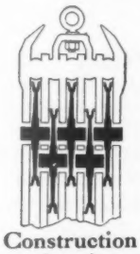
RATES ON EQUIPMENT

WASHINGTON, D. C., Mar. 17.—The Lone Star Gas Co. and the Community Natural Gas Co. were upheld in their freight rate protests when Examiner F. A. Christopher reported to the Interstate Commerce Commission that freight rates on meter service boxes from Fort Worth to Oklahoma points are unreasonable; and that rates on wrought iron pipe from Oklahoma to Bonham, Richland and Trenton are unreasonable. In all cases he recommended the awarding of reparation and the waiver of collection of overcharges.

Summarizing the principal features

Speed

Light weight Block carries heaviest loads at maximum speed. Unnecessary to reverse drawworks to lower Block, as properly-applied bearings are anti-friction.

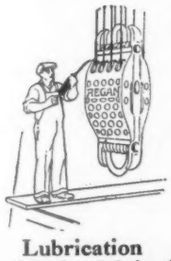


Construction

Latest engineering principles. Compact, yet with maximum bearing area; staggered construction. Fewest wearing parts. All parts rigidly constructed and of ample heft to permit overhauling many times, keeping Block "as good as new." Well balanced.

Bearings

Special Regan roller type anti-friction bearings. The pin and sheave, being integral, revolve together. This permits entire surface of pin to be used, making it equal to that of race, resulting in an equally balanced bearing.



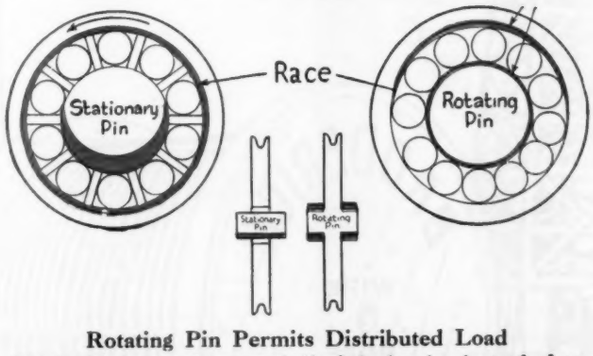
Lubrication

Positive Alemite lubrication. A separate, easily accessible conduit for each bearing.

Materials

Steel construction throughout. All wearing parts special alloy steel, heat-treated. No cast iron parts.

Regan Traveling Block

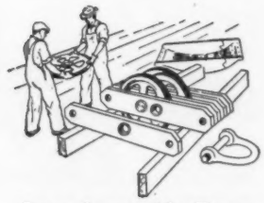


Rotating Pin Permits Distributed Load

The load being on the upper half of the bearing instead of on the lower half makes it unnecessary to use a separator as the rollers of the bearings automatically space, being fed, one by one, on the upward movement from the lower half of the bearing. In *stationary* pin Blocks the maximum wear is concentrated on only half of the circumference of the pin. This brings about rapid destruction of the pin. Such an inherent defect is not present in the Regan Block. The sheave pin rotates. The wear is evenly distributed.

Workmanship

All contacting parts precision-machined, permitting of greatest rigidity, interchangeability and lengthened life.



Interchangeable Parts

Exacting standardization makes all parts interchangeable, allowing replacements to be made on derrick floor quickly, saving time and money. Smaller stock of parts can be carried. Each block has high salvage value. The bearings are interchangeable with those of Crown Block.

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OKLAHOMA'S SOUTHEAST CORNER FROM A PETROLEUM VIEWPOINT

By J. L. Dwyer

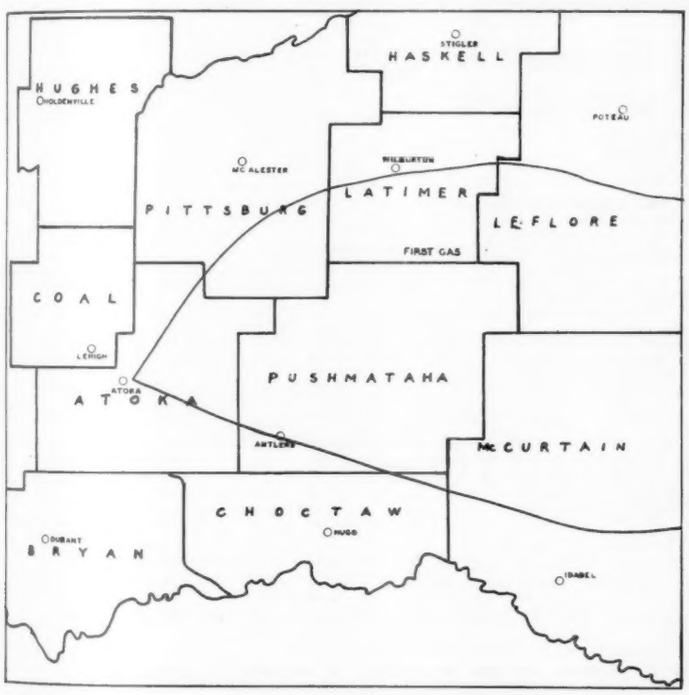
The extreme southeast part of Oklahoma has for a long time had many showings of oil, and a few instances of scattered gas wells, but it has failed to command any unusual interest from the oil-producing companies.

In times when the potentialities of every part of the Mid-Continent Field are either being appraised, or else have been subjected to an appraisal and rejected, this large region has been somewhat slighted; and the main reason for the slight is that its possibilities have been considered very limited.

The map accompanying this story outlines the counties in the area and the irregular lines show the region believed to have the least favorable possibilities for the accumulation of petroleum. It might be titled, "Where it seems advisable NOT to drill for oil."

The larger portion of the area thus outlined is occupied by parts of the Ouachita Mountain system, and according to current geological belief this area has very slight chances of producing oil in any appreciable quantities.

The twelfth annual field conference of the Oklahoma Geological Survey has recently been completed and the major part of the work was done on this part of the State, although some parties of the conference elected to visit the Seminole and Allen Fields instead of accompanying the main group through the southeastern part of the State.



The southeast corner of Oklahoma. The irregular line includes territory believed to hold very limited oil possibilities, judged from a geological standpoint.

Surface Beds Very Thick

According to the prevailing geological opinion, the main reason for holding the oil prospects of this region lightly is that the surface beds have such an extraordinary thickness compared to the surface beds of other regions. The Jack Fork sandstone, and the Stanley shale are prominent members of this group which have unusual thicknesses in this part of the State. The Jack Fork sandstone is named after Jack Fork Mountain of this region, and it is believed to have a thickness of some 6,000 feet. The Stanley shale, a stratum of Mississippian age, has a similar thickness in most of the area where it occurs, but in some places the thickness of this stratum is believed to approximate 10,000 feet.

The one feature of the region which might be interpreted as favoring a chance for the accumulation of petroleum is that after a more detailed study some synclinal conditions may be found which are sufficiently broad to have wrinkles formed upon their sides.

The general postiion of this mountain system (the Ouachitas) is at right angles to the general position of the Arbuckle and Wichita systems of mountains, and evidently this system was not caused by the same conditions; for had it been, the angular position of the systems would have been constant.

The Stringtown shale is an important formation of this area. It is named after Stringtown, northeast of Atoka, in Atoka County, where it outcrops. An interesting note of this shale is that it has been found to contain many tuning fork graptolites. There have also been many graptolites found in this shale which resemble graptolites which occur in the Tyner sand, and other formations immediately above the true Wilcox horizon in the Greater Seminole area.

Graptolites are tiny fossils having a feather-like construction. They have played a most important part in many regions of the State, most notably in the Seminole area. It was by identification of a graptolite that Ray (Bib) Quiett of the Indian Territory Illuminating Oil Co. discovered that the Viola limestone was running high in the Independent Oil & Gas Co. and R. F. Garland's No. 1 Fixico which opened the Wilcox sand in Seminole. When this discovery was made, the Indian Territory company fortified its holdings around the Independent-Garland well.

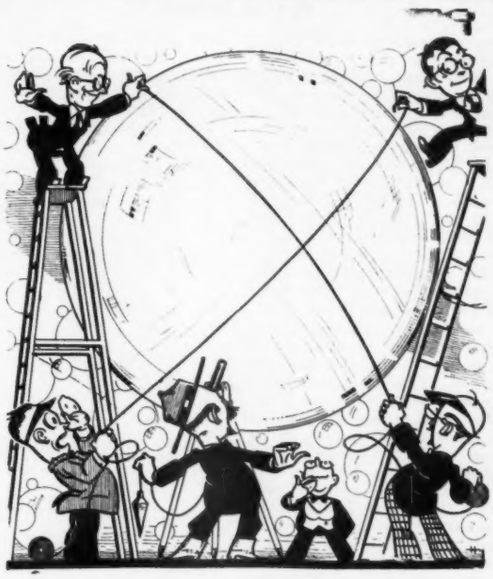
Presence of Graptolites

The presence of graptolites in formations in southeastern Oklahoma is not necessarily believed to indicate any producing relations between formations in this area and the Seminole area; but they are merely markers which render the strata easily identifiable.

There are numerous horizontal faults

(Continued on Page 99)

Billions of Bubbles



The Amazing Measurement of a Bubble

Natural Gasoline Producers are agreed that the greater the intimacy between gas and absorption oil the greater the extraction.

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It is estimated that the majority of Campbell bubbles composing the oil-froth are 1/32" in diameter. Assume however that they average as large as 1/16".

By simple computation then, there are, theoretically, 4,096 bubbles per cubic inch; 7,077,888 per cubic foot; 1,801,-464,053 per Absorber—or 31,000,000,-000,000 per day—"Billions of Bubbles!"

And each cubic foot of Oil-Froth exposes 603 square feet of oil film or 153,-475 square feet per Absorber.

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Campbell Oil-Froth Absorbers

NATURAL GAS PRODUCTION AND CONSUMPTION DURING 1926

By G. R. Hopkins[1]

The natural-gas industry in the United States continued to grow slowly but steadily in 1926 when 1,313,019,000,000 cubic feet of gas was produced and delivered to consumers, an increase of 10 per cent over 1925. Of this amount 166,000,000 cubic feet was piped to Mexico and Canada, and 1,312,853,000,000 cubic feet was consumed in the United States in 1926. The value of the gas per thousand cubic feet at the wells increased from 9.4 cents in 1925 to 9.5 cents in 1926, and at points of consumption from 22.3 cents in 1925 to 22.8 cents in 1926. Neither of these figures, however, equaled those of 1923 or of some previous years.

Domestic (household) consumers used 22 per cent of the total consumption of natural gas in 1926, and industrial concerns 78 per cent. This indicates a slight growth in amount consumed by the latter in 1926. The total value of domestic consumption, however, was greater, as domestic users paid an average of 58.1 cents per thousand cubic feet, as compared with 12.8 cents by industrial concerns. In 1926 there were 3,731,000 domestic consumers of natural gas, as compared with 3,508,000 in 1925. This represents a gain of 223,000, which is, with the exception of 1913 and 1922, the largest yearly increase ever recorded. California and Texas each recorded an increase of about 70,000 in number of domestic consumers and far surpassed the other states in this respect.

The relative rank of the three chief gas-producing states was unchanged in 1926. Oklahoma, which ranks first, recorded a 15 per cent gain in output; California, which ranks second, a 9 per cent gain; but production in West Virginia, the next ranking State, shows a slight decrease. Texas registered a material gain in output and not only took fourth place from Louisiana but threatens to displace West Virginia in the near future.

The tendency to extract the greatest possible amount of natural-gas gasoline from natural gas before consumption of the gas was very marked in 1926. A total of 1,206,300,000,000 cubic feet of natural gas was treated for the recovery of natural-gas gasoline in 1926, which is equivalent to 92 per cent of the total production. In 1925 the proportion treated was 88 per cent.

The total consumption of natural gas (including residue gas from natural-gas gasoline plants) by industrial users in 1926 amounted to 1,023,678,000,000 cubic feet, an increase over 1925 of 12 per cent. The consumption of natural gas for field and industrial uses, exclusive of carbon black, again showed an increase.

Though carbon black output showed an increase in 1926 over 1925, the amount of natural gas consumed in its manufacture decreased. The increased output was due to an increase in percentage of recovery.

Oklahoma, because of its importance as a producer of petroleum and natural-gas gasoline, ranked first among the states in the use of natural gas for field purposes; that is, for drilling, pumping, and operating natural-gas gasoline recovery plants. Louisiana, by reason of being the chief carbon black producer, led in the consumption of natural gas for "other industrial" purposes.

The interstate movement of natural gas in 1926 amounted to 209,527,000,000 cubic feet, a slight increase over 1925. The movement from West Virginia to Ohio and Pennsylvania continued to be of first importance. Of more than passing interest was the increase in the counter movement of gas from Ohio to West Virginia.

(Continued on Page 99)

[1]Figures compiled by H. Backus, of the Bureau of Mines.

NATURAL GAS PRODUCED AND CONSUMED IN THE UNITED STATES, 1926

State—	Produced and delivered to consumers, including deliveries in other states: Quantity M cubic feet	Quantity: Per cent of total	Estimated value at the wells: Total	Estimated value at the wells: Average per M cubic feet (cents)	Value at points of consumption: Total	Value at points of consumption: Average per M cubic feet (cents)	Consumed, including receipts from other states: Quantity M cubic feet	Quantity: Per cent of total	Value at points of consumption: Total	Value at points of consumption: Average per M cubic foot (cents)
Arkansas	43,566,000	3.3	2,000,000	4.6	5,817,000	13.4	52,630,000	4.0	7,027,000	13.4
California	204,915,000	15.6	16,803,000	8.2	35,495,000	17.3	204,915,000	15.6	35,495,000	17.3
Colorado	553,800	(*)	50,000	9.0	130,000	23.5	503,800	(*)	125,000	24.8
Illinois	3,808,000	.3	762,000	20.0	863,000	22.7	3,808,000	.3	863,000	22.7
Indiana	901,000	.1	377,000	41.8	379,000	42.1	1,854,000	.1	906,000	48.9
Kansas	38,095,000	2.9	2,884,000	7.6	12,547,700	32.9	61,142,000	4.7	14,381,000	23.5
Kentucky	10,410,000	.8	961,000	9.2	3,378,000	32.4	18,126,000	1.4	6,119,000	33.8
Louisiana	157,423,000	12.0	4,864,000	3.1	8,768,000	5.6	148,886,000	11.3	6,912,000	4.6
Michigan	400	(*)	40	10.0	200	50.0	400	(*)	200	50.0
Missouri	1,000	(*)	100	10.0	700	70.0	5,819,000	.4	4,997,400	85.9
Montana	2,283,000	.2	86,000	3.8	450,000	19.7	3,295,000	.2	650,000	19.7
New Mexico	921,000	.1	72,000	7.8	75,000	8.1	921,000	.1	75,000	8.1
New York	†7,027,000	.5	2,237,000	31.8	4,499,000	64.0	17,864,000	1.4	11,443,000	64.1
Ohio	47,363,000	3.6	8,781,000	18.5	25,403,000	53.6	115,719,000	8.8	65,982,000	57.0
Oklahoma	286,421,000	21.8	22,828,000	8.0	42,140,000	14.7	244,993,000	18.7	33,251,000	13.6
Pennsylvania	107,089,000	8.2	25,112,000	23.4	50,040,000	46.7	125,836,000	9.6	56,724,000	45.1
South Dakota	10,100	(*)	1,010	10.0	14,000	138.6	10,100	(*)	14,000	138.6
Tennessee	11,500	(*)	1,150	10.0	1,900	16.5	11,500	(*)	1,900	16.5
Texas	‡175,392,000	13.4	10,085,000	5.7	28,165,000	16.1	187,341,000	14.3	30,807,000	16.4
West Virginia	180,223,000	13.7	24,582,000	13.6	76,396,000	42.4	72,784,000	5.5	18,337,000	25.2
Wyoming	46,567,000	3.5	2,203,000	4.7	4,669,000	10.0	45,605,000	3.5	4,474,000	9.8
Other§	38,200	(*)	3,700	9.7	6,500	17.0	789,200	.1	540,500	68.5
	1,313,019,000	100.0	124,693,000	9.5	299,238,000	22.8	1,312,853,000	100.0	299,125,000	22.8

*Less than 0.1 per cent.
†Includes 79,000,000 cubic feet consumed in Canada.
‡Includes 87,000,000 cubic feet consumed in Mexico.
§Alaska, Maryland (consumption only), and North Dakota.

NATURAL GAS CONSUMED IN THE UNITED STATES, 1926

State—	Domestic: Number of consumers	Domestic: M cubic feet	Domestic: Value at points of consumption: Total	Domestic: Value at points of consumption: Average (cents)	Industrial: Field (drilling, pumping and operating gasoline recovery plants): M cubic feet (estimated)	Industrial: Field (drilling, pumping and operating gasoline recovery plants): Value at points of consumption (estimated)	Industrial: Other industrial, including use in manufacture of carbon black: M cubic feet	Industrial: Other industrial, including use in manufacture of carbon black: Value at points of consumption: Total	Industrial: Other industrial, including use in manufacture of carbon black: Value at points of consumption: Average (cents)	Industrial: Total industrial: M cubic feet	Industrial: Total industrial: Value at points of consumption: Total	Industrial: Total industrial: Value at points of consumption: Average (cents)
Arkansas	52,210	7,824,000	3,532,000	45.1	35,195,000	1,615,000	9,611,000	1,880,000	19.6	44,806,000	3,495,000	7.8
California	632,000	20,960,000	14,801,000	70.6	123,953,000	10,177,000	60,002,000	10,517,000	17.5	183,955,000	20,694,000	11.2
Colorado	1,974	78,800	68,000	86.3	378,000	34,000	47,000	23,000	48.9	425,000	57,000	13.4
Illinois	11,910	203,000	142,000	70.0	3,605,000	721,000	.....	.....	...	3,605,000	721,000	20.0
Indiana	13,860	722,000	386,000	53.5	72,000	30,000	1,060,000	490,000	46.2	1,132,000	520,000	45.9
Kansas	142,730	10,133,000	6,905,000	68.1	11,536,000	873,000	39,473,000	6,603,000	16.7	51,009,000	7,476,000	14.7
Kentucky	137,500	12,404,000	5,258,000	42.4	874,000	81,000	4,848,000	780,000	16.1	5,722,000	861,000	15.0
Louisiana	35,710	4,413,000	1,669,000	37.8	25,763,000	796,000	118,710,000	4,447,000	3.7	144,473,000	5,243,000	3.6
Michigan	6	400	200	50.0	.....	.....	.....	.....	...	.....	.....	...
Missouri	100,300	5,288,000	4,843,400	91.6	.....	.....	531,000	154,000	29.0	531,000	154,000	29.0
Montana	6,345	1,383,000	589,000	42.6	290,000	11,000	1,622,000	50,000	3.1	1,912,000	61,000	3.2
New Mexico	140	28,000	5,000	17.9	893,000	70,000	.....	.....	...	893,000	70,000	7.8
New York	235,290	16,909,000	11,004,000	65.1	491,000	157,000	464,000	282,000	60.8	955,000	439,000	46.0
Ohio	1,124,080	87,672,000	53,970,000	61.6	3,130,000	580,000	24,917,000	11,432,000	45.9	28,047,000	12,012,000	42.8
Oklahoma	166,660	17,617,000	8,840,000	50.2	159,269,000	12,694,000	68,107,000	11,717,000	17.2	227,376,000	24,411,000	10.7
Pennsylvania	599,900	56,148,000	33,912,000	60.4	7,988,000	1,873,000	61,700,000	20,939,000	33.8	69,688,000	22,812,000	32.7
South Dakota	375	10,100	14,000	138.6	.....	.....	.....	.....	...	.....	.....	...
Tennessee	80	5,500	1,300	23.6	6,000	600	.....	.....	...	6,000	600	10.0
Texas	279,380	18,045,000	11,986,000	66.4	69,369,000	3,996,000	99,927,000	14,825,000	14.8	169,296,000	18,821,000	11.1
West Virginia	165,800	25,700,000	8,166,000	31.8	14,225,000	1,940,000	32,859,000	8,231,000	25.0	47,084,000	10,171,000	21.6
Wyoming	11,280	2,880,000	1,314,000	45.6	21,136,000	1,000,000	21,589,000	2,160,000	10.0	42,725,000	3,160,000	7.4
Other*	12,670	751,200	534,100	71.1	15,000	1,400	23,000	5,000	21.7	38,000	6,400	16.8
	3,730,800	289,175,000	167,940,000	58.1	478,188,000	36,650,000	545,490,000	94,535,000	17.3	1,023,678,000	131,185,000	12.8

*Alaska, Maryland and North Dakota.

NATURAL GAS PRODUCED IN THE UNITED STATES AND DELIVERED TO CONSUMERS, 1917-1926, BY STATES, IN MILLIONS OF CUBIC FEET

Year—	Arkansas	California	Illinois	Indiana	Kansas	Kentucky	Louisiana	Montana	New York	Ohio	Oklahoma	Penn'via.	Texas	W.Virg'na.	Wyo'ng.	Others	Total	Value at points of consumption: Total (thousands of dollars)	Value at points of consumption: Average per M cubic feet (cts.)
1917	5,610	49,427	4,439	1,712	24,439	2,802	31,287	334	8,372	68,917	137,384	133,397	17,047	308,617	*1,223	103	795,110	142,089	17.9
1918	5,295	39,719	4,473	1,667	27,825	3,022	36,094	177	8,461	61,261	124,317	123,813	13,440	265,161	4,339	1,937	721,001	153,554	21.1
1919	5,587	55,607	3,825	1,407	16,150	2,057	47,062	858	8,124	63,153	163,649	113,489	24,710	234,095	6,014	129	745,916	160,388	21.6
1920	9,027	66,041	3,013	1,779	21,158	3,345	58,274	818	8,419	58,938	154,467	125,787	37,063	239,719	10,312	50	798,210	196,194	24.6
1921	4,260	75,942	2,646	1,066	15,717	4,820	58,004	336	6,583	47,412	124,058	86,144	44,504	174,921	15,608	31	662,052	174,617	26.4
1922	9,700	84,580	3,383	947	20,299	5,872	70,267	486	6,947	51,481	140,631	101,276	47,945	195,228	23,427	27	762,546	221,535	29.1
1923	24,215	131,434	4,049	880	30,913	11,953	112,031	1,470	6,497	53,813	203,082	112,562	74,535	203,867	35,523	153	1,006,976	240,001	23.8
1924	36,616	189,692	4,072	998	25,580	12,875	160,945	1,071	6,196	47,396	214,452	105,863	107,247	182,285	46,036	197	1,141,521	253,556	22.2
1925	41,878	187,789	4,165	1,168	26,917	10,770	152,620	1,496	6,210	43,235	249,285	101,632	134,872	180,345	45,539	650	1,188,571	265,271	22.3
1926	43,566	204,915	3,808	901	38,095	10,410	157,423	2,283	7,027	47,363	286,421	107,089	175,392	180,223	46,567	1,536	1,313,019	299,238	22.8

*Includes Colorado.

STATISTICS OF NATURAL GAS IN THE UNITED STATES, 1917-1926

Year—	Produced and delivered to consumers (billions of cubic feet)	Treated for recovery of natural-gas gasoline: Billions of cubic feet	Treated for recovery of natural-gas gasoline: Per cent of total consumption	Domestic consumption: Number of consumers (thousands)	Domestic consumption: Billions of cubic feet	Domestic consumption: Per cent of total consumption	Domestic consumption: Average value at points of consumption per M cubic feet (cents)	Industrial consumption: Field (billions of cubic feet)	Industrial consumption: Carbon black (billions of cubic feet)	Industrial consumption: Other industrial (billions of cubic feet)	Industrial consumption: Total industrial (billions of cubic feet)	Industrial consumption: Per cent of total consumption	Average value at points of consumption per M cubic feet (cents)
1917	795	429	54	2,431	258	32	30.8	(*)	(*)	(*)	537	68	11.7
1918	721	449	62	2,509	271	38	31.4	(*)	(*)	(*)	450	62	15.3
1919	746	480	64	2,501	256	34	34.6	170	50	270	490	66	14.3
1920	798	496	62	2,615	286	36	38.2	202	41	269	512	64	17.0
1921	662	465	70	2,631	248	38	44.4	132	51	181	414	62	15.5
1922	763	545	71	3,015	255	33	49.9	198	54	256	508	67	15.6
1923	1,007	876	87	3,234	277	28	51.4	343	109	278	730	72	12.4
1924	†1,142	1,016	89	3,443	285	25	54.0	393	157	306	856	75	11.6
1925	†1,189	1,040	88	‡3,508	272	23	56.0	424	140	362	916	77	12.3
1926	†1,313	1,206	92	3,731	289	22	58.1	478	131	415	1,024	78	12.8

*Figures not available. †Includes gas piped to Canada and Mexico. ‡Revised figures.

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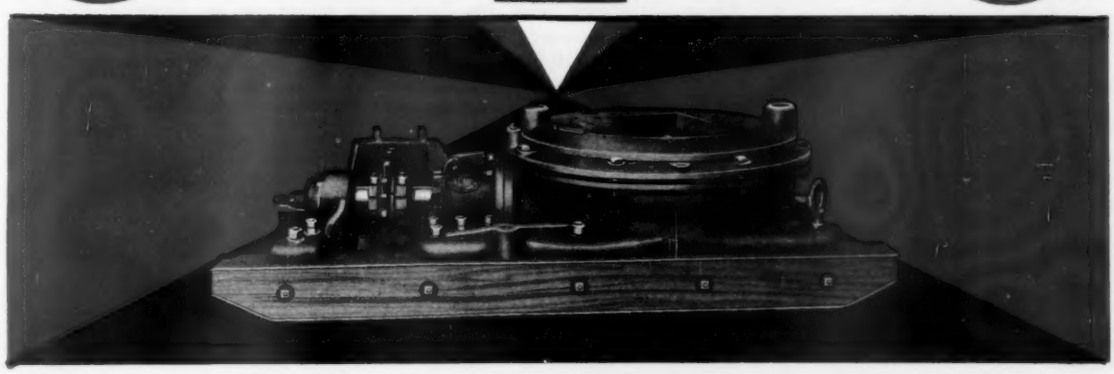

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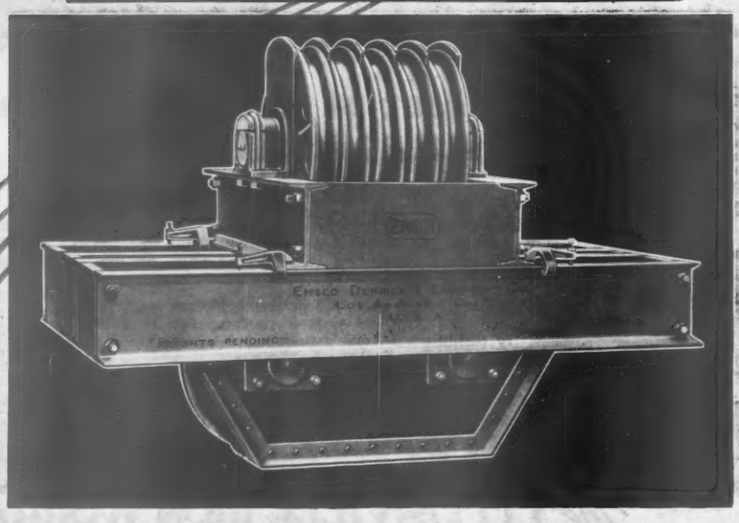

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NATURAL GAS PRODUCTION AND CONSUMPTION IN 1926

(Continued from Page 96)

SUMMARY OF STATISTICS FOR NATURAL GAS IN THE UNITED STATES, 1922-1926

	1922	1923	1924	1925	1926
Natural gas consumed:					
Domestic.....millions of cubic feet..	254,413	277,050	285,152	272,146	289,175
Industrial—					
Carbon black.....do....	53,629	109,096	156,514	140,366	130,321
Field.....do....	197,850	343,076	393,437	423,524	478,188
Other industrial.....do....	256,654	277,745	306,379	352,403	415,169
	762,546	1,006,967	1,141,482	1,188,439	1,312,853
Domestic.....per cent..	33.4	27.5	25	23	22
Industrial.....do....	66.6	72.5	75	77	78
Treated for natural-gas gasoline:					
Millions of cubic feet.....	545,139	875,711	1,016,276	1,040,390	1,206,300
Per cent of total consumption.....	71.5	87.0	89	88	92
Domestic consumers.....thousands..	3,015	3,234	3,443	*3,508	3,731
Value of natural gas at wells:					
Total.....thousands of dollars..	84,873	100,849	105,779	112,047	124,693
Average per M cubic feet.....cents..	11.1	10.0	9.3	9.4	9.5
Value of natural gas at points of consumption:					
Total.....thousands of dollars..	221,535	239,995	253,830	265,184	299,125
Domestic.....do....	126,902	142,317	154,075	152,494	167,940
Industrial.....do....	94,633	97,678	99,755	112,690	131,185
Average per M cubic feet—					
Domestic.....cents..	49.9	51.4	54.0	56.0	58.1
Industrial.....do....	18.6	13.4	11.6	12.3	12.8
Domestic and industrial.....do....	29.1	23.8	22.2	22.3	22.8
Natural-gas gasoline (raw):					
Quantity.....thousands of gallons..	505,832	816,226	933,861	1,127,470	1,363,090
Value at plants—					
Total.....thousands of dollars..	72,711	77,268	82,233	120,383	136,412
Average per gallon.....cents..	14.4	9.5	8.8	10.7	10.0
Carbon black:					
Quantity.....thousands of pounds..	67,795	138,263	186,872	177,417	180,576
Value at plants—					
Total.....thousands of dollars..	5,820	11,692	11,565	9,640	9,939
Average per pound.....cents..	8.6	8.5	6.2	5.4	5.5

*Revised figures.

INTERSTATE TRANSPORTATION OF NATURAL GAS, IN THOUSANDS OF CUBIC FEET, 1925-1926

State in which gas was produced	State to which gas was transported	1925	1926
Colorado	Wyoming	.....	50,000
Indiana	Kentucky	346,000	408,000
Kansas	Missouri	5,338,000	5,818,000
	Oklahoma	167,000	414,000
		5,505,000	6,232,000
Kentucky	West Virginia	1,603,000	1,595,000
Louisiana	Arkansas	8,370,000	8,063,000
	Texas	6,321,000	6,419,000
		14,691,000	14,482,000
New York	Canada	68,000	79,000
	Pennsylvania	28,000	17,000
		96,000	96,000
Ohio	Indiana	964,000	1,361,000
	West Virginia	824,000	4,709,000
		1,788,000	6,070,000
Oklahoma	Arkansas	549,000	236,000
	Kansas	27,272,000	29,279,000
	Texas	12,173,000	12,327,000
		39,994,000	41,842,000
Pennsylvania	New York	10,389,000	10,933,000
	Ohio	166,000	1,429,000
	West Virginia	2,122,000	2,419,000
		12,677,000	14,781,000
Texas	Arkansas	746,000	765,000
	Louisiana	10,071,000	5,945,000
	Mexico	64,000	87,000
		10,881,000	6,797,000
West Virginia	Kentucky	9,088,000	8,903,000
	Maryland	708,000	751,000
	Ohio	70,356,000	72,997,000
	Pennsylvania	30,492,000	33,511,000
		110,644,000	116,162,000
Wyoming	Montana	1,112,000	1,012,000
		199,337,000	209,527,000

OKLAHOMA'S SOUTHEAST CORNER VIEWPOINT

(Continued from Page 95)

occurring in this area, and thrust faults have also been detected in innumerable localities. There are several instances of this latter where the Stanley shale has been thrust up over the Jack Fork sandstone. The presence of such a number and such a variety of faults is another reason advanced for the limited oil-bearing prospects of the region.

The recent geological conference on this area has resulted in several debates, and one of the more prominent is the division point between Pennsylvanian and Mississippian formations. The Caney shale is present in the geological cross section of this country, and it is regarding the age of this shale that much discussion has been occasioned. There are some who are inclined to extend the Pennsylvanian to include this stratum, and this action would naturally change the geological complexion of the entire section.

Both the Stanley shale and the Jack Fork sandstone has been found to contain an abundance of plant life, showing that they were not marine base sediments and indicating the presence of brackish waters. According to the consensus of opinion, these deposits were probably in a delta condition.

Faults and Exposures

There are many formations common to the subsurface section of other parts of Oklahoma which outcrop and are present in the southeastern part of the State. The most common practice of naming formations is to call them after the town near which they appear on the surface. In the Ouachita Mountains, and various other parts of this section of the State, one finds Viola, Caney shale, Woodford (Chattanooga) shale on the surface.

Taking an imaginary trip from McAlester, Okla., and traveling east to Hartshorne and into Ti Valley, there are several faults and exposures of the Wapanucka and Atoka shale, reaching Caney shale close to the town of Ti. Going northeast, the Stanley outcrops along Winding Stair Fault, one of the prominent faults of the region. In Pushmataha County, asphalt-impregnated sandstones are found close to the Stanley shale, and in the west side of the county and also on the east side of Atoka County, scattered boulders of Arbuckle, Viola, Hunton, Woodford, Sycamore and Wapanucka formations were found.

At Stringtown, in Atoka County, a quarry is located which furnishes material for studies of the Talihina chert and Stringtown shales. From Stringtown to Coalgate, concretions in the Caney shale are found.

A summary of the geological conference indicates that the country is much more adapted to good hunting for game than for oil possibilities.

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JOINT WORK OF BUREAU OF MINES AND NATURAL GAS DEPARTMENT

By E. L. Rawlins*

In 1919, A. W. Ambrose, then chief petroleum engineer of the Bureau of Mines, in his annual report relative to the work of the bureau, very clear'y and definitely explained the object of the formation of the petroleum and natural gas division and the work which this division should do. As explained by Mr. Ambrose, the chief interest of the bureau lies in the conservation of our natural resources, and any development that results in better and more efficient utilitization of a natural resource really is helping to conserve that resource. In the petroleum and natural gas industry, any development in technique which will cause more efficient operation in delivering the oil and gas to a consumer helps to aid in the conservation of oil and gas. The policy of the bureau was not to be dictatorial or attempt to assume control of operations. The bureau was formed as a method of offering suggestions for improvements that might he'p operating companies to better conserve natural gas and petroleum; these suggestions being based upon both the experience of the government engineers and the careful experimental work and study of individual problems upon which the bureau should concentrate.

In pursuing this policy relative to natural gas, the bureau has found it necessary to become interested in the production, transmission, and distribution of natural gas. In the development of studying problems involving these factors there has been a c'ose co-operation between the bureau of mines and the gas associations which has been largely responsible for the accomplishments that have been made.

The object of this paper is to discuss briefly the work that has been accomplished by the co-operation between the bureau of mines and the gas associations and to show how this co-operative spirit has facilitated all the work that has been done.

Progress of Natural Gas Investigations

Experimental work of a research character and careful study has been given to several problems that were considered of importance in the natural gas industry. Briefly, the most important of the problems that have been studied include the conservation of natural gas in the home, fundamental studies of the characteristics of natural gas, and the production and transmission of natural gas. The production and transmission problem include such separate divisions as leakage from high pressure natural gas transmission lines, use of orifice meters for measurement purposes, flow of natural gas through transmission lines, methods of controlling and operating gas wells, and removal of water from gas wells.

Leakage from High Pressure

The first problem that was investigated relating to the production and transmission of natural gas was the leakage of natural gas from high pressure natural gas transmission lines. Conf'icting ideas were prevalent regarding the magnitude of the amount of gas that was lost through this source each year and there were no def'nite data available of the amount of leakage or facts rerarding leakage. The former Natural Gas Association of America, now the Natural Gas Division of the American Gas Association, was vitally interested in th's problem. A plan was worked out whereby the problem was investigated by a co-operative agreement between the bureau of mines and the association. The work was done as a part of the program of the transportation committee of the association. The fie'd experimental tests and the method of presentation of results, while under the jurisdiction of the bureau and done exactly as if it had been entirely a bureau program, was subject to the plans, comments and criticisms of the committee. Briefly, the objects of this were:

(1) To devise a method suitable for determining the leakage rate from any particular transmission line.

(2) To study the laws governing gas leakage.

(3) To determine the reasonable leakage that shou'd be expected from any transmission line.

(4 To study the economic aspects of leakage prevention.

(5) To write comprehensive reports which would include the data and results of the investigation.

This work has been finished and reports were made by the transportation committee to the assoc'ation at the conventions of the association. The bureau also has issued the following reports: Reports of Investigations, Serial, "Methods of Testing High Pressure Natural Gas Transmission Lines;" Serial "Value of Testing High Pressure Natural Gas Transmission Lines," and Information Circular, "Leakage Tests on Natural Gas Transmission Lines." A bulletin now is in process of publication which will discuss thoroughly the entire leakage problem.

Orifice Meter Measurement

A fundamental study combined with a carefully selected program of experimental tests on the use of orifice meters for natural gas measurement has been in progress for several years. This work is part of the program of the measurement committee of the association. Both the bureau of standards and the bureau of mines are co-operating in doing this work. Since the problem is really a study of standardization of measurement, the bureau of standards is concentrating especially in co-operating with the measurement committee of the association. The The bureau of mines also is vitally interested and not only is represented on the measurement committee but actually participates in the experimental tests. The resu't of the work has been gratifying. Data already have been secured which show the proper method of installing an orifice meter setting to eliminate measurement errors due to disturbances to the gas flow. Recommendations have been published by the association. Further work has been done to determine the effect of changing the rate of flow upon the meter coefficient. This work will be completed this year together with a study of the effect of deviation from Boyle's law at high pressures upon natural gas measurement.

Through Transmission Lines

The Natural Gas Department of the American Gas Association through the transportation committee and the bureau of mines are co-operating in studying another transmission problem on the flow of natural gas through high pressure transmission lines. Briefly the objects of this investigation are as follows:

(1) A careful review and compilation of all existing data relative to pipe line flow.

(2) A pre'iminary investigation of the physical properties of natural gases and their effect upon flow through pipe lines.

(3) An investigation of relations between the quantity of flow through different sizes of pipe and the various factors that influence this flow.

(4) A complete set of investigations of actual flows through as many pipe lines as could be tested practica'ly.

At present, the investigation is in progress and the data have not been analyzed thoroughly enough to warrant definite recommendations Actual tests have been made on 20 operating pipe lines in Oklahoma, Kansas, Texas and California, and it is planned to make other tests in different parts of the country. When the program is completed it is hoped to have data available that after being analyzed will make possible a comprehensive report on this subject.

Control and Operation of Gas Wells

The members of the gas association committees also have given some helpful suggestions and assistance in the work on

*Associate Natural Gas Engineer, United States Bureau of Mines. Before Oklahoma Utilities Gas Division Convention at Tulsa.

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the problem of the control and operation of gas wells. The problem is a further development of work that was done in direct co-operation with the association. A study has been made in one locality, the Osage district of Oklahoma, of using small orifices to control deliveries from gas wells and to apply the gas laws of rock pressures, working pressures, sand pressures and delivered volumes so as to devise a method of determining well capacities without excessive blowing to the atmosphere. It is hoped that this work can be continued and studied in other districts in order to obtain data for a comprehensive and complete report. A paper has been prepared and published on "Methods of Control and Operations of Gas Wells" in the trade journals and also printed in booklet form by the association. Copies of the report can be obtained from the Bureau of Mines at Bartlesville.

Removal of Water From Gas Wells

A Bureau of Mines technical paper is being prepared at present on the removal of water from gas wells. The report will give a detailed discussion of the methods of water removal and will emphasize the use of a siphon, its design, and method of installation.

Flow of Air and Natural Gas

Before any fundamental study could be made of leakage from transmission lines, it was necessary to understand thoroughly the laws governing the flow of gas through different kinds of openings. Accordingly, a detailed study was made of the flow of both air and natural gas through small orifices. The compilation of the data obtained from this work has furnished material for a Bureau of Mines technical paper, in process of publication. In this report, a discussion of the conditions of flow under any pressure relation is given together with coefficients and data for each condition with which to calculate the rate of flow through small orifices. The results of actual coefficients apply strictly to the actual orifices which were used to determine them, but the principal results that should be beneficial are the methods of calibration, which are explained, and approximate coefficients for definite orifice efficiencies to be used in designing small orifice installations. The orifices described vary from one thirty-second to one-quarter inch in diameter. It is hoped that a continuation of this work will be possible so that approximate coefficients can be obtained for any condition of flow with any desirable construction of orifice or short tube.

Value of Co-operative Work

The co-operation that has existed between the Bureau of Mines and the gas association has been largely responsible for progress that has been made in the experimental studies on natural gas. The Natural Gas Association not only has rendered valuable assistance in furnishing engineering comments and criticisms through the various committees, but has given financial assistance, in order that the work could be facilitated.

The representation of the Bureau of Mines on the gas committees such as the transportation and measurement committees of the Natural Gas Department of the American Gas Association, the technical committee of the Natural Gasoline Manufacturers Association, and other gas committees is of benefit to both the bureau and to the gas operating companies. Personal contact through committees with operators gives the bureau an opportunity to realize the nature of the technical problems which is of importance to the industry and plans can be made accordingly. Also, the industry, through the representatives of the different operating companies on these committees, can be advised of the progress of any investigation upon which the bureau is concentrating, and there is no necessity of awaiting a carefully prepared government publication to be able to take advantage of new developments. In other words, the information can be made available while it still is "new."

Preparation of Bulletins

It is not generally realized how much care and study has to be taken in publishing a completed bulletin or technical paper relative to a bureau project. The manuscript has to be prepared very carefully and then is criticised by different engineers after which it is rewritten and then edited by a competent editor. The printing is done in Washington. This process necessarily consumes time, but the finished report is supposed to be able to withstand criticism and be correct in every detail. The co-operation between the bureau and committees of the associations affords the industry an opportunity to become acquainted with the important details of an investigation without having to wait for final publication. This fact that has been especially true in the contact between the Natural Gas Association and the bureau.

A very interesting and important development has been noticed since the beginning of the committee work by the gas associations. The representatives from the different operating companies meet together and discuss freely experiences peculiar to each company. These discussions are beneficial to all of the companies. The discussions also give information which is used for investigations to be conducted by the bureau in co-operation with the associations.

The Bureau of Mines realizes the value of the co-operative work with the gas associations to both the bureau and to the industry. The progress of the work is facilitated; the work planned is of special interest to the industry; the industry has an opportunity to offer comments and criticisms before and while the work is being done, thus eliminating undesired criticism after the work is completed; the suggestions from different experienced operators make the experimental work more valuable; and the industry receives immediate benefit from any work that is done.

The bureau wishes to express appreciation for the confidence of the gas associations and the manifesting of this confidence by close co-operation, both from a financial standpoint and from an engineering standpoint in the form of comments, criticisms and suggestions through committee.

OKLAHOMA UTILITIES ASSN. ELECTS OFFICERS

The Oklahoma Utilities Association elected officers for the coming year on the closing day of the convention held in the Mayo Hotel in Tulsa on March 13, 14 and 15 and selected H. L. Montgomery, of Bartlesville, as vice president and C. W. Robbins, of Ponca City, R. C. Sharp, of Tulsa, and Mr. Montgomery as members of its executive board. All are prominent in the natural gas industry.

The complete board of officers elected is as follows: President, L. W. Scherer, of Yale; first vice president, H. L. Montgomery, of Bartlesville; second vice president, T. H. Steffens, Sand Springs; treasurer, W. R. Emerson, Oklahoma City; manager, E. F. McKay, Oklahoma City.

Following is the personnel of the new executive board of the association, including newly elected members: Electric light and power division—Fred W. Insull, Tulsa; E. R. Ernsberger and J. F. Owens, Oklahoma City. Gas division—C. W. Robbins, Ponca City; R. C. Sharp, Tulsa, and H. L. Montgomery, Bartlesville. Telephone division—L. W. Sherer, Yale; A. C. Oliver, Shattuck, and J. A. Winton, Mulhall. Electric railway division—T. H. Steffens, Sand Springs; J. A. Frates, Tulsa, and H. B. Cobban, Miami. Manufacturers and suppliers division—A. D. Peabody, Oklahoma City; F. B. Hathaway, Oklahoma City, and Charles Skove, Oklahoma City. Public relations division—Harvey E. Rhodes, Oklahoma City; R. S. McBeth, Tulsa, and George A. Davis, Oklahoma City.

The following were elected chairmen of the divisions: Electric light and power, Frank Meyer, Oklahoma City; gas division, R. W. Hendee, Tulsa; telephone, Joe Nelson, Perkins; electric railway, J. G. Phillips, Muskogee; manufacturers and suppliers, A. D. Peabody, Oklahoma City; public relations, L. P. Arnold, Tulsa.

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In view of these experiences our guarantee is a conservative one. It says simply that unless the NO-CO-RO Drop & Seat gives you twice the service of the best ball and seat you have ever used your money will be refunded.

To delay trying this remarkable improvement is simply to delay a guaranteed substantial reduction in pulling costs.

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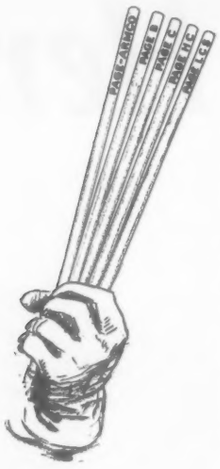

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ELECTRICAL POWER POSSIBILITIES IN THE PETROLEUM INDUSTRY

By O. A. Jennings*
Oklahoma Gas & Electric Co.

The petroleum industry is the least eltctrified with the one exception, agricultural, of any of the following major industries: Automobiles, 90 per cent; rubber, 80 per cent; cement, 75 per cent; leather, 65 per cent; steel, 65 per cent; textile, 55 per cent; coal, 50 per cent, and oil, 5 per cent. On the other hand, the electric industry relies upon and is a major customer for petroleum products. Briefly enumerated, the principal electric uses are fuel oil, lubricating oil for the generating stations and millions of motor bearings, transformer oils, oil switches, solvents used in the manufacture of insulating compounds, paraffin for impregnating materials and numerous other ways in which petroleum products are utilized in electrical work, all amounting to millions of dollars revenue to the oil companies.

The use of central station service in the petroleum field has made great advances in the past few years, particularly in the States of Oklahoma, California, Texas, Kansas, Louisiana and Arkansas. However, considering the potential business the surface has only been scratched. On a 50 per cent saturation the annual kilowatt hour sales would be many billions, no doubt more than any other single industry in the world; likewise, having the highest annual load factor.

To secure any large amount of business from the petroleum industry, electric rates necessarily have to be on a competitive basis with other kinds of power, such as oil, gas and steam engines, using fuel at very low cost, and in a number of cases, no cost at all. This being the case, the average layman would doubt the ability of any commercial department to secure any great amount of oil field business. However, there are many other advantages offered by electric drive using central station service.

I do not think it advisable for a small utility operating only one small generating station to solicit this class of business, as they cannot obtain the economies of several large generating stations tied together under one management; nor can they offer the necessary organization required to properly handle this particular class of business, such as commercial, engineering and operating departments.

Use in Production

The petroleum industry is subdivided into three classifications; production, transportation and refining. German scientists are experimenting with the use and aid of electricity to actually locate oil bearing sand and so far the experiments are encouraging. Several thousand wells have been drilled electrically and are beyond the experimental stage. A large number of oil companies have adopted this method. The electrical equipment is now standard with the manufacturers in regular production, and also carried in stock for immediate shipment. The details of this equipment are now so well known that they need no lengthy mentioning. The current requirements are—three-phase, 440 volts, requiring from 50 to 200 k.w. demand, depending upon the work performed, such as drilling, bailing out, underreaming, fishing jobs or slush pump operation. A portable substation is generally used consisting of metering equipment, lightning arresters and three 50 Kva transformers. Large capacity behind the substation is necessary to handle the severe surges; otherwise, you will have complaints from lighting customers.

Pumping Equipment

The electrical equipment for beam well pumping consists of a double rated motor in capacities of 10-25, 15-30 and 30-65 horespower; the lower rating used for pumping, the higher rating for pu'ling out the rods and tubing when the wells sand up or other troubles that may occur. This equipment, like that of the drilling equipment, is carried in stock by the manufacturers for immediate shipment. It is also the standard practice of many oil companies to carry a number of these motors in their own warehouse.

Air-gas lift pumping presents an ideal application for electric motors for here light weights, simple foundations and low operating costs have a definite appeal in new fields. Air-gas lift, with motor driven compressors have been adopted wholesale and results have proven them to be a wise selection. The sizes most generally used at present are 75 and 100 horespower. The air-gas method was first used on a large scale in the great Seminole Field, where the Oklahoma Gas & Electric Co. has a connected load of 60,000 horsepower. This business was secured and served in 12 months, a remarkable record for any utility that can furnish 40,000 k.w. capacity upon such short notice. The big production of the Seminole Field is due in a large measure to the use of electricity furnished by the Oklahoma Gas & Electric Co.

In a large number of oil fields the crude oil has to be treated before the pipe line companies will accept it for transportation. Electric dehydrators were developed to provide an economical method for breaking up emulsions of water and oil which cannot be separated by settling. The oil containing the emulsion is passed through an electric field, between two electrodes having a difference of potential of about 11,000 volts. The discharge between the electrodes breaks down the emulsion and the water then settles out. This raises the gravity of the oil to practically its original figure and thus increases its market value. The saving thereby made is usually sufficient to pay for the treater within a period of operation of nine months or less. The average power consumption is in the neighborhood of 2,000 kilowatt hours per month, though it may vary with the conditions from 1,200 to 5,000 kilowatt hours.

Pipe Lines

We are now getting considerable business from the various pipe line companies. The Oklahoma Gas & Electric Co. has approximately 30,000 horsepower connected to their lines in Oklahoma. Such companies as the Shell Pipe Line Co., Magnolia Pipe Line Co., Prairie Pipe Line Co., Gulf Pipe Line Co., Sinclair Pipe Line Co., Texas Pipe Line Co., Oklahoma Pipe Line Co., Shaffer Oil & Refining Co. and others are large users of Oklahoma Gas & Electric Co. service. One of the outstanding installations now under construction is the Shell Pipe Line Co.'s new 10-inch line from West Texas Field to Cushing, Okla. There will be 14 pump stations entirely electrified. These stations are located about 30 miles apart and consist of three 400-horsepower motors, 2,200 volts, each direct connected to a centrifugal pump. Two of these units in each station will be in constant operation—the third being for standby. These stations are all expected to operate at about 90 per cent annual load factor. Four stations in Oklahoma will be served by the Oklahoma Gas & Electric Co. and one station by the Southwestern Light & Power Co. The balance of the stations will be located in Texas and served by the Texas Power & Light Co. and the West Texas Utilities Co. This is one of the first completely electrified pipe lines in the country.

R. P. Bascom, vice president and general manager of the Shell Pipe Line Co., gave this installation considerable thought before making his decision.

The Magnolia Pipe Line Co. has one station in Texas which is full automatic, and there is no particular reason why a number of stations on a pipe line cannot be operated automatically, without any attendant whatsoever, similar to automatic substations for interurban lines and automatic water power generating stations.

There is nothing special or peculiar about applying motors to pipe line operation, as standard motors of either squir-

*Before Oklahoma Utilities Association at Tulsa.

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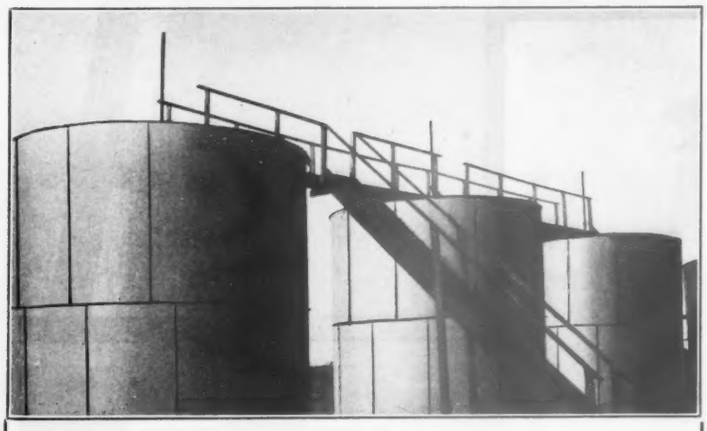

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rel cage or synchronous type can be used. This character of business is very desirable on the part of the utility as it is a large block of power carrying a very high annual load factor.

Refineries

Practically all large refineries in the United States use electric service extensively to drive their circulating water, oil and gas pumps, air compressors, ice machines, and a multiplicity of other applications. The refinery was probably the first of the departments to use and apply electric motor drive apparatus. Practically all of the refineries in Oklahoma use electric service and among the outstanding ones is the Shaffer Oil & Refining Co. at Cushing; the Marland Oil & Refining Co. at Ponca City; the Pure Oil Co. at Muskogee; the Transcontinental Oil Co. at Boynton and Bristow and the Sapulpa Refinery. These companies have a total of several thousand horsepower in motors, securing their service from the Oklahoma Gas & Electric Co. Refineries have need for a large amount of steam for the steam stills. This steam is furnished from a large battery of boilers operating at 100 pounds pressure and reduced down to 5 or 10 pounds at the steam still. Some refiners have installed in the steam line a non-condensing turbine, using the exhaust steam at 5 or 10 pounds back pressure for the steam stills. The turbine virtually acts as a reducing valve and the electricity generated is more or less of a by-product, costing practically nothing. It would, therefore, seem impossible for central station to overcome this difficulty; however, the operation is more theoretical than practical, in that a balanced condition can not be obtained. The application of motor drive and the use of electricity in oil refineries require no special application and is very similar to any other kind of industry. Refinery load is very desirable on the part of the utilities as they operate 24 hours at a fairly high load factor.

STEEL PRODUCTION 87 PER CENT; QUARTER TO EQUAL LAST YEAR'S

By B. E. V. Luty

PITTSBURGH, Pa., Mar. 19.—Trade in tubular goods runs about the same as for weeks past. There is a slight seasonal increase from week to week in buying of standard pipe, but even this line is a trifle dull for the time of year. There is hope among pipe mills that by August 1 oil consumption will be increased to such an extent as to furnish encouragement to drilling.

By surface indications, as to the volume of bookings of late and the rate of shipping the pipe industry appears duller relative to other finished steel products than is really the case, for there are special influences in the case of the other products. In rails there is heavy production, not far from capacity, because the railroads require the great bulk of their rails to be delivered during the first half of the year. Rail production after July 1 will be quite light. In tin plate the deliveries are always considerably heavier in the first half of a year. In substantially all the other steel products, in bars, shapes, plates, wire products, strips and sheets there have been price advances announced by the mills at various times in the past few months, and these advances drove in much tonnage, in outright purchases and in contracts, buyers being given an opportunity to cover in advance. Appearances have accumulated lately that mills obligated themselves for deliveries well beyond April 1 in these lines at old prices or at slight advances, and there is reason to suspect that deliveries have been running considerably heavier in these lines on account of this special influence.

Steel Bookings Up

The United States Steel Corp. reported 4,398,189 tons of unfilled obligations February 29, representing 122,242 tons increase during February, against 303,073 tons increase during January. In the last three months of 1927 there were large increases, which were quite seasonal, occurring practically every year at that time, on account of the annual rail buying movement and contracting in various lines for the first quarter of the new year. Whatever buyers do as to other quarters, they regularly contract heavily for the first quarter.

The January and February increases, totaling 425,315 tons, were on the other hand not in accordance with any uniform precedent, for in the past two years these months showed decreases while in 1925 there were increases. It seems to be more than a coincidence that when January and February showed increases there was a stiffening market while when there were decreases prices were softening. In 1925 prices were being marked up and January and February witnessed 468,095 tons increase. In 1926 there was a decrease of 416,542 tons and in 1927 a decrease of 363,850 tons, the market being engaged in softening in each case.

Advanced prices lately announced in the various lines are holding fairly well, as to the open market, but buyers are so well covered there is little buying, and mill operations are sustained chiefly by old orders and by specifications against contracts now running. These obligations, at below the current market, extend well into the second quarter of the year and the interesting question is what will occur to prices when the large buyers have received all their lower priced material.

The principle does not apply to tubular goods, which have not been advanced, even on paper. Buying is strictly in accordance with current requirements. There continues to be shadjng in the secondary market in various sections and as the practice of mills consigning stocks is widespread the mills are connected with this shading. In direct sales it is claimed they are adhering to regular prices.

Steel ingot production in February was approximately 4,045,000 gross tons, representing 87 per cent of capacity, against an 83 per cent rate in January and 75 per cent for 1927 as a whole. The quarter's production will be about the same as that in the first quarter of last year.

D. P. BARCROFT DIES; WATER DRIVE PIONEER

OIL CITY, Pa., Mar. 17.—David Palmer Barcroft, aged 90 years, one of the oldest oil producers in this section, died at his home here Sunday morning.

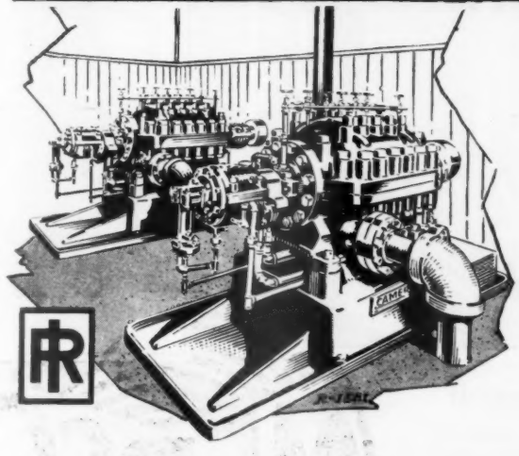
He was born on December 11, 1837. He came here in the early sixties, taking part in the Tarr farm and Columbia farm excitements. He entered into the producing business with John W. Kirkwood, the partnership continuing until the death of Mr. Kirkwood a few years ago.

The firm of Barcroft and Kirkwood was the first to realize the benefit of water drive in oil production. While located at Columbia farm in the later seventies they figured out that water was driving out the oil. They then bought a farm which they figured was in the path of the oil drive. Production proved to be large and they hauled the oil around by Two Mile run nights in order to conceal the secret of their success.

Mr. Barcroft retained his interest in the oil industry for a number of years, being associated also with W. J. and E. C. Breene. Most of his life was spent in the vicinity of Kaneville, Pa.

OSGOOD A. BERRY DIES

Osgood A. Berry, died in a Fort Worth hospital last week. He was active for more than 20 years in the fields in this country and in India.



A large pipe line company recently installed Cameron Centrifugal Pipe Line Pumps on one of their lines. Each of these pumps is electric-motor-driven and capable of carrying a full load of 22,000 bbls. a day against a total head of 600 lbs. pressure.

* As stated in the Handbook of the Petroleum Industry, David T. Day.

A 20,000,000-barrel loss

THERE ARE 20,000,000 barrels of "B. S.," so it is estimated,* in the pipe lines and tank farms of the United States—20,000,000 barrels of unmarketable waste to be burnt or otherwise disposed of yearly. The pipe line companies, of course, bear most of this loss.

"B. S." is largely avoided through the use of Cameron Centrifugal Pipe Line Pumps. These pumps send the oil flowing steadily through the line without causing emulsification of the oil and water such as results when reciprocating pumps are used. Oil is delivered at its destination just as it is received and with no loss in volume.

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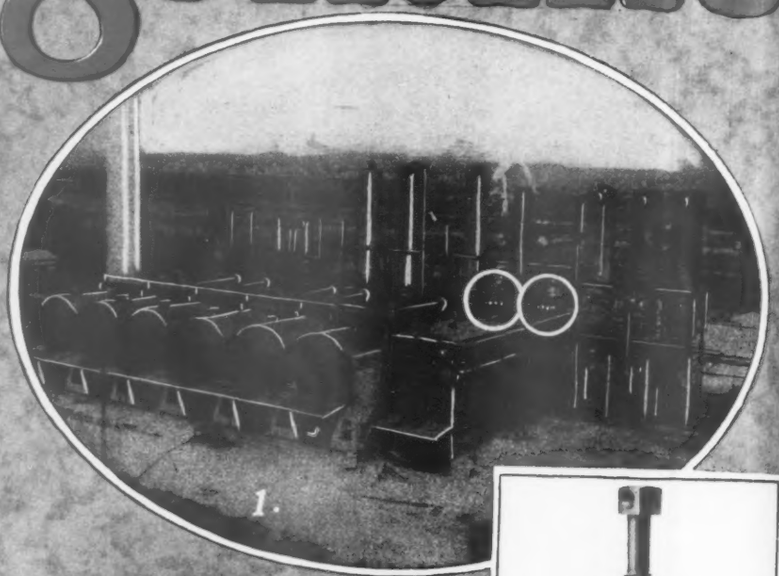
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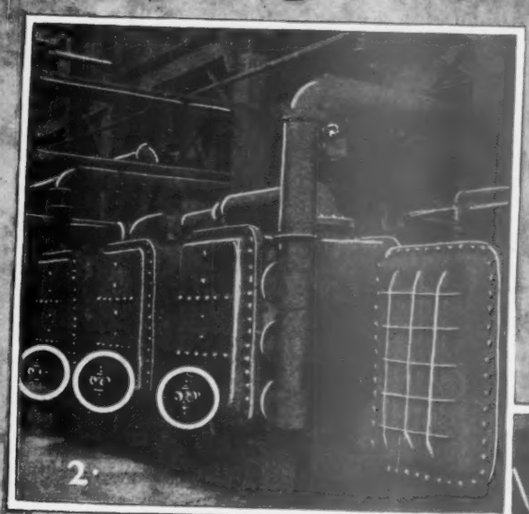
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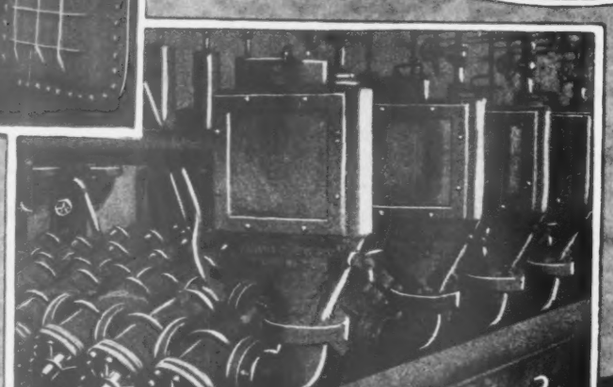
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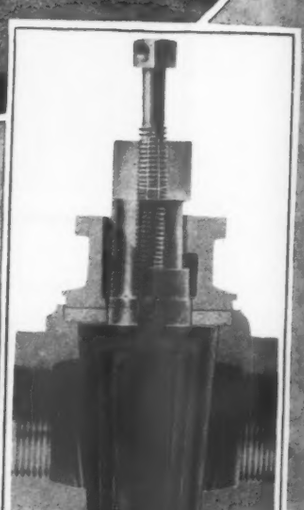

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Photo No. 1 is a partial view of the plant, showing location of Heat Exchangers with these valves. No. 2 shows a close-up view of Heat Exchangers with Nordstrom Valves. No. 3 shows part of a battery of 152 Nordstrom 4" 3-way Valves in the Look House.

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Nordstrom Valves

INCREASED OIL AND GAS OUTPUT MARK YEAR'S RESULTS IN CANADA

By Victor Lauriston

In the Dominion of Canada, the year 1927 was marked by a further increase in crude production which resulted in an aggregate production for the year of approximately 500,000 bbls., the highest figure reached since 1908.

This increase was almost wholly due to increased production in the Alberta fields, eastern Canada remaining practically stationary. Complete revised figures for 1927 are not yet available, but the totals for the year are based on actual production figures plus careful estimates for the concluding months of the year.

The figures for the various Canadian provinces in 1926 and 1927 are as follows (in barrels):

	1926	1927
Ontario	136,971	140,410
New Brunswick	10,544	31,180
Alberta	217,088	329,817
Total	364,603	501,407

In New Brunswick there has been in recent years a steady increase in the small production of the Stoney Creek Field. This oil production is incidental to an extensive and important natural gas production.

In the Ontario Fields, the production comes entirely from old pools, the most recent of which, those at Mosa in Middlesex County and in Dover, in Kent County, were first opened about 1917. The most important of the Ontario oil pools are those of Petrolia-Enniskillen, first discovered about 1860; Oil Springs, producing from the present horizon since about 1881; and Bothwell, producing since 1896. A nominal production is secured from the Trenton Pool in Dover Township, Kent County; the Tilbury and Thamesville Pools in the same county; the Dutton Pool in Elgin, the Mosa Pool in Middlesex; the Moore, Sarnia and Plympton Pools in Lambton County, and the Onondaga Pool in Brant County.

With the possible exception of Thamesville, all these pools have been steadily declining in recent years; and with no new producing areas of importance opened, it is only a matter of time until these Ontario pools peter out. The Corniferous limestone, when production is secured from the lower lime, is, however, singularly retentive, and the ultimate exhaustion of the more important Ontario pools will yet require a great many years.

Projects for oil mining in these shallow areas have been considered and some preliminary work has been done; but so far no commercial undertaking has resulted.

In Eastern Canada

Development work in eastern Canada has in recent years been decidedly limited. Most of the drilling done in Ontario in 1927 was done by the natural gas companies, with a view to maintaining gas reserves for their customers. This drilling was pretty well confined to the old gas-producing areas. Where, 20 years ago, wells with a flush production of 5,000,000 feet a day were not uncommon, now a production of 100,000 feet a day is regarded as satisfactory. There was a little shallow drilling for oil in the Thamesville Pool in Kent County, resulting in a few small pumpers. A few wildcat wells scattered over western Ontario proved unproductive.

In New Brunswick, New Brunswick Gas & Oilfields, Ltd., which holds an exclusive concession, did some drilling to maintain its gas reserves; and the marked proportionate increase in its previous nominal oil production was an incidental result of this drilling for gas.

The one important wildcat test in eastern Canada was the No. 2 deep well drilled by the Henry L. Doherty Co. in Prince Edward Island. This test, carried to nearly 6,000 feet without reaching the granite or securing production, was ultimately abandoned. Whether further drilling will be done by the Doherty interests under their Prince Edward Island concession is still uncertain.

Alberta Production

The 1927 results strongly indicate that the future of a great Canadian oil industry lies in the west, and particularly in the province of Alberta. Though drilling operations in Alberta were not as extensive as had been anticipated, the production for the year showed an increase of approximately 112,000 bbls., or over 50 per cent. The Alberta production for 1927 was double the entire Canadian production of 1924, and practically double the Alberta production of 1925. All indications point to a continued increase in the Alberta production in 1928.

Alberta production in 1927 fell into three general classes: The 73 Baume crude naphtha of the Turner Valley, the 42 to 55 Baume light crude oils of the Turner Valley and the 12 to 22 Baume heavy crudes of the Wainwright Field of east-central Alberta and the Skiff Field of southern Alberta. The Turner Valley Field is in the Rocky Mountain foothills, and the Wainwright and Skiff Fields are in the plains area.

The detailed figures, in barrels, are:

Crude naphtha, Turner Valley	288,500
Light crudes, Turner Valley	36,950
Heavy crudes, Wainwright and Skiff	3,817

In 1927 the Turner Valley Field continued to be the center not merely of drilling activity but of resulting production In 1926 the one important producing well was the Royalite Oil Co.'s No. 4 naphtha gusher. This well's production has increased every year since it was first brought in, in October, 1924. In 1925 it yielded 168,722 bbls.; in 1926 it showed 205,000 bbls.; and last year its recorded production was 217,048.4 bbls.

Crude Naphtha Producers

Toward the beginning of 1927 the further testing of the Royalite dolomite in the Turner Valley produced definite results in the completion of three producing wells. Though none of these even approached Royalite No. 4 in production, they definitely proved that the dolomite was productive over a considerable area, and that Royalite No. 4 was not, as had been suspected, a mere "pocket."

The following are the actual and potential crude naphtha producers listed in the Turney Valley Field:

	Bbls. per Day
Royalite Nos. 1 and 3	8
McLeod No. 2	40
Royalite No. 4	600
Royalite No. 7	90
Illinois-Alberta No. 1	107
Vulcan Oils No. 1	110
Home Oil Co. No. 1 (potential)	50
Total	1,005

Royalite No. 7, LSD 3, Section 13-20-3w5, is the most recent completion to tap the Royalite dolomite. All these producers, except the Home Oil Co. No. 1, are in the west-central portion of the field.

Light Crude in Two Sands

In addition to further proving the Royalite dolomite as a producing horizon, the year 1927 has been marked by two other important results in the Turner Valley Field. The first of these came early in the year, when the New McDougall-Segur Oil Co. No 1, drilling in LSD 14, Section 12-20-3w5, secured a fair commercial production of light crude in the Blairmore-Dakota horizon at 2,595 feet. This well, starting with a flush production of around 100 bbls., has now a settled production of 40 bbls. The same company's No. 2 well has since been productive at the same horizon, and a third well is now being drilled. The McLeod Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, later got a light crude production in the same horizon; and two wells drilled by the Home Oil Co. got good showings in the Blairmore-Dakota, though they were later carried deeper. The New McDougall-Segur and McLeod wells are in the central area, while the Home wells are in the south; so that possibilities in

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the Blairmore-Dakota are distributed over a considerable area.

Later in the year two tests in the southern section of the Turner Valley got a light crude production in an entirely new horizon. This horizon is apparently a quartzite member of the Fernie shales, and overlies the Madison limestone of which the Royalite dolomite is a member. The Home Oil Co.'s No. 1, LSD 10, Section 20-19-2w5, got this production at 4,560 feet. The Dalhousie Oil Co.'s No. 5, LSD 16, Section 30-19-2w5, got production in the same horizon at approximately the same depth. Both these wells are in the south end of the field. How this sand will hold up under a continuous production test is uncertain, but it indicates important possibilities at least in the southern part of the Turner Valley.

The latest summary of light crude producers in the Turner Valley shows the following:

	Bbls.
McLeod Oil Co. No. 3	40
New McDougall-Segur No. 1	40
New McDougall-Segur No. 2	50
Home Oil Co. No. 1 (potential)	50
Dalhousie Oil Co. No. 5 (potential)	50
Total per day	230

The Home Oil Co.'s No. 1 is interesting in that it produces both light crude oil and wet gas with a crude naphtha recovery.

In the north end of the field there was one completion in 1927, the Stockmen Oils No. 1, LSD 1-2, Section 27-20-3w5. This test, after drilling to more than 4,550 feet, is eventually, owing to drilling difficulties, being finished as a gasser at 1,760 feet, with an estimated open flow of around 3,000,000 feet a day. As the well has not been actually put into production, the potential crude naphtha recovery is still uncertain.

The year thus showed, in the Turner Valley, nine producers completed; not including the Dalhousie No. 5, which is being drilled deeper.

Imperial Extends Operations

A feature of the 1927 drilling operations was the increase of the Imperial Oil, Ltd., subsidiaries. Of these, the Royalite Oil Co., the pioneer Imperial enterprise in the field, was, at the end of 1927, drilling its No. 10 well, and the Dalhousie Oil Co. was drilling its No. 6. In the course of the year a third subsidiary, the Foothills Gas & Oil Co., was incorporated. This company seems to have selected as its particular field of activity the north end of the field, where it is drilling its No. 1 well in the southwest quarter of Section 26-20-3w5.

Imperial interests have, in the course of the year, taken over a large amount of additional acreage. Thus, the Home Oil Co. properties and acreage in the south end of the field were acquired some months ago, and that company's tests are being completed by the Imperial company. Acreage and an unfinished test of Dolomite Oils, Ltd., in LSD 8, Section 1-20-3w5, have been taken over by the Foothills Oil & Gas Co. A number of other leases have been acquired by Imperial interests; and with these holdings the already extensive development campaign is to be materially increased.

Imperial subsidiaries in the past year were active on 10 wells, of which 1, the Royalite No. 7, was completed. The Dalhousie Oil Co. is drilling Nos. 1, 5 (with some production) and 6; the Royalite Oil Co. drilled Nos. 6, 7 (productive), 8, 9 and 10; the Foothills Oil & Gas Co. is drilling No. 1; and the Home Oil Co. is drilling No. 2, with No. 1 being put into production.

A number of independent companies were also active. These include the British Dominion Oil Development Corp., which is drilling the deepest test in Canada at 6,170 feet; Calmont Oils; Great West Oils, which has a difficult fishing job at depth; Okalta Oils, Sentinel Oil Co., Seneca Oils, Stockmen Oils and Spooner Oils. Illinois-Alberta Oil Co. and Vulcan Oils, Ltd., both of which secured production in the Royalite dolomite, are each drilling a No. 2 deep test close to the No. 1 producer.

The following is a summary of the Turner Valley operations at the end of 1927; exclusive of the producing wells already enumerated:

ACTIVE DRILLING TESTS IN ALBERTA

Company—	Location— LSD	Section	Depth	Remarks
Advance Oil Co. No. 5	12	19- 19-2w5	....	rigged up
Big Chief No. 1	3–4	5- 20-2w5	4,370	shut down
British Dominion	4	5- 20-2w5	6,170	drilling
Calmont Oils	2	1- 20-1w5	4,715	drilling
Cooper-Nanton Oils	2	7- 20-2w5	4,840	shut down
Dalhousie No. 1	4	18- 20-2w5	4,413	cement
Dalhousie No. 5	16	30- 19-2w5	4,830	drilling
Dalhousie No. 6	10	12- 20-3w5	4,517	repairs
Dolomite Oils	8	1-120-3w5	1,850	shut down
Dutch-America	15	4- 19-2w5	4,327	shut down
Foothills No. 1	SW¼	26- 20-3w5	3,498	reaming
Great West No. 1	SE¼	7- 20-2w5	5,370	shut down
Home Oil Co. No. 1-A	14	20- 19-3w5	3,142	shut down
Home Oil Co. No. 2	14	20- 19-2w5	3,175	casing
Highland Oil Co.	5	5- 20-2w5	3,020	shut down
Illinois-Alberta No. 2	14	12- 20-3w5	1,241	drilling
McLeod Oil Co. No. 1	16	1- 20-3w5	3,180	drilling
Mayland Oils	10	17- 19-2w5	....	rigged up
New McDougall-Segur No. 3	14	12- 20-3w5	....	derrick
New Black Diamond	1	3- 20-3w5	1,380	shut down
New Valley	4	6- 21-2w5	2,080	shut down
Okalta Oils No. 1	1	1- 20-3w5	4,400	repairs
Okalta Oils No. 2	8	1- 20-3w5	2,774	shut down
Royalite Oil Co. No. 6	16	31- 10-2w5	3,685	reaming
Royalite Oil Co. No. 8	9	12- 20-3w5	2,636	new rig
Royalite Oil Co. No. 9	6	13- 20-3w5	2,724	drilling
Royalite Oil Co. No. 10	NE¼	12- 20-3w5	2,231	drilling
Seneca Oils	1	34- 20-3w5	3,710	drilling
Sentinel Oil Co.	..	8- 20-2w5	3,285	drilling
Regent Oil Co.	16	1- 20-3w5	2,700	shut down
Spooner Oils No. 1	12	13- 20-3w5	4,890	drilling
Stockmen Oils No. 1	1–2	27- 20-3w5	4,550	gasser
Vulcan Oils No. 2	11	13- 20-3w5	4,210	drilling
Canada Southern	9	1- 20-3w5	2,605	shut down

This list includes all tests not fully completed that were active in 1927, with a few that, though inactive, are likely to resume operations. There are, besides, seven tests, two abandoned and five whose status in respect to future operations is very uncertain. The list does not include a long string of some 60 locations made chiefly in 1926 in the boom which followed the opening of Royalite No. 4 gusher, but on which no real work has ever been done.

At the close of 1927 some seven or eight tests were within a few hundred feet of the Royalite dolomite, giving promise of results early in 1928.

New Field at Skiff

The most important development of 1927 outside the Turner Valley was the opening of the Skiff Field. Devenish Petroleum No. 1, LSD 5, Section 27-5-14-w4, early in the spring got a promising show of heavy crude in the Ellis sand at 3,090 feet. The well bailed about 250 bbls. a day; but later this production was shut off and the test drilled to the top of the Madison. When no deeper production was encountered, the drillers came back and finished the well in the Ellis. It is now being put on the pump. Under an agreement between Devenish Petroleum, Ltd., and Imperial Oil, Ltd., the Skiff acreage is to be extensively tested by the Imperial company in the coming year. The production of No. 1 will be taken by the Imperial Oil, Ltd., refinery at Calgary.

The heavy crude production of the Wainwright Field is still only a small factor in the Alberta production; and in the past year operations in that once promising area have been decidedly quiet. The field was opened about 1923 by British Petroleums, Ltd., of Vancouver, whose No. 2 well got a heavy crude at 1,970 feet. Three other wells drilled by this company got the oil sand; production was also secured by Edmonton-Wain-

(Continued on Page 161)

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CANADIAN FIELDS

(Continued from Page 54)

of 2,674.3 bbls., a daily average of 92.5 bbls. The Royalite Oil Co.'s absorption plant was closed down throughout the month, but Royalite's Nos. 1 and 2 in February produced 40 bbls. on the drip. All this crude naphtha production was taken by the Royalite Oil Co. and delivered through the pipe line to the Imperial Oil, Ltd., refinery at Calgary.

Among the light crude producers whose production was handled by the Royalite Oil Co., Dalhousie Oil Co.'s No. 5, LSD 16, Section 30-19-2w5, in February made 1,831 bbls., a daily average of 63 bbls. Home Oil Co.'s No. 1, LSD 10, Section 20-19-2w4, made 850 bbls., a daily average of 29.3 bbls McLeod Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, made 419.6 bbls., or approximately 14.5 bbls. a day. Royalite Oil Co.'s No. 10, NE Section 12-20-3w5, produced 405 bbls., but delivered only part of the month. Dalhousie's No. 5 and Home's No. 1 produce from a horizon in the Fernie shales, and the other light crude wells from the Blairmore-Dakota. Deliveries to the Royalite Oil Co. pipe line for the month totaled 25,518.9 bbls. of crude naphtha, or approximately 880 bbls. a day. Light crude deliveries amounted to 3,505 6 bbls., or around 121 bbls. a day.

In addition to the foregoing, Vulcan Oils' No. 1 had some crude naphtha production from the deep lime, and the New McDougall-Segur's Nos. 1 and 2 and the Canada Southern's No. 1 had some light crude production from the Blairmore-Dakota. Detailed figures covering the production of these wells for February have not yet been made public.

For the week ending March 3, Illinois-Alberta's No. 1, LSD 14, Section 12-20-3w4, produced 689 bbls., averaging 98.3 bbls. a day. This figure is based on crude naphtha production at the well head, there being about 7 per cent evaporation by the time it is delivered to the pipe line.

Increasing Production

In general the crude naphtha wells producing from the Madison limestone are maintaining and even increasing their production; but the light crude wells in the Blairmore-Dakota show some falling off from the initial production.

Royalite Oil Co.'s No. 6 LSD 16, Section 31-10-2w5, is reported at 4,280 feet. This test is still above the limestone, which is apparently somewhat deeper at this point than was anticipated. Royalite's No 9, LSD 6, Section 13-20-3w5, is at 3,758 feet and reamed to the bottom. Royalite's No. 10, NE Section 12-20-3w5, is pumping light crude from the Blairmore-Dakota at 2,332 feet. Royalite's No. 11, LSD 10, Section 12-20-3w5, is reported drilling at 1,279 feet.

Dalhousie Oil Co.'s No. 6, LSD 10, Section 13-20-3w5, is at 4,773 feet and drilling. This test also appears to be located at a point where the lime is rather lower than expected, as the drill has not yet got the top of the Madison formation.

Foothills Oil & Gas Co.'s No. 1, SW Section 26-20-3w5, is at 3,498 feet and fishing. Foothills' No. 2, LSD 8, Section 1-20-3w5, is at 2,070 feet and straightening a crooked hole. Home Oil Co.'s No. 2, LSD 14, Section 20-19-2w5, is at 3,670 feet and fishing for a bailer. Home's No. 3, same LSD, is building a new derrick to replace the one destroyed by fire when the test was down 184 feet; the test will likely resume drilling well before the end of March.

In the north end of the field, Stockman Oils' No. 1, LSD 1-2, Section 27-20-3w5, has finished salvaging the 12½-inch and 10-inch casing and cleaned out some 180 feet of caving. A string of 4¼-inch casing will be run and cemented, after which a drip will be put in to test the crude naphtha recovery from the wet gas. The well is making approximately 3,000,000 feet a day.

Seneca Oils, LSD 1, Section 34-20-3w5, is drilling at 3,590 feet with 8¼-inch casing at 3,535 feet.

New Valley Oil Co., LSD 4, Section 6-21-2w5, is getting in shape to resume drilling at 2,080 feet.

Advance Oil Co.'s No. 5, LSD 16, Section 19-19-2w5, spudded in last week. This is a test of the Home area in the south end of the field, where light crude production has been encountered in the Fernie shale horizon overlying the Madison.

New McDougall-Segur Oil Co.'s No. 3, LSD 14, Section 12-20-3w5, is around 1,000 feet and has finished straightening about 20 feet of hole which was cemented.

Two New Tests

In addition to the Advance No. 5, two new tests will, it is understood, be started in the Turner Valley early this spring by independent companies. R. H. Scott has a contract for a test for the Coast-to-Coast Oil Holdings, Ltd., in the S half LSD 8, Section 11-20-3w5. The test is to spud in not later than June 1.

Model Oils will drill a test in LSD 8, Section 22-20-3w5. This test may spud in within the next month or six weeks. The company held its annual meeting at Calgary recently when arrangements were made for the test, and the following officers were elected: President, Thomas W. McKee; vice president, William R. McArthur; secretary, Eric Richardson; solicitor and managing director, William C. Fisher; directors, H. R. Chauncey, W. Grant McKay, Chester W. Barber.

Mayland Oil Co., LSD 10, Section 17-19-2w5, is ready to spud in.

It is reported that the provincial government of Alberta is planning an effort to check the waste of gas in the Turner Valley Field. The gas and oil conservation act, passed in the Legislature some two years ago, establishes regulations governing conservation; but in some instances it has been impossible to shut in the larger gassers The aggregate production is considerably more than the immediate markets can absorb.

In the Highwood district, southern foothills, Imperial, Ltd.'s No. 1 Highwood, LSD 3, Section 36-18-3w5, is still engaged in straightening a crooked hole at 3,624 feet.

In the Morley Reserve area, Wabash Oils, on the Lea lease, is drilling around 950 feet with a fair flow of gas coming through the diamond drill stem. A small caving in the lower Fernie shales has been cemented. A sample from the 885-foot level tested 41.7 per cent carbon, which is thought favorable to oil production; the carbon ratio in the Turner Valley running as high as 60 per cent. The test is expected to get the Madison lime at about 1,200 feet, which is far shallower than others drilling on the Morley Reserve, or in the Turner Valley Field.

Moose Mountain

In the Moose Mountain district, Signal Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is reported making new hole at 1,847 feet, after cementing off a small caving at the bottom of the well. A supply of 8-inch casing is being brought in, and this will be run as soon as necessary. The test is expected to get production at 2 500 feet or less.

The Sinclair structure is to be tested by Famous Oils, Ltd., of Calgary, which has made five locations and will drill No. 1 well in Section 30-19-3w5. The company has 1,500 acres, mostly in the Waite Valley area. The structre was first geologized by E H. Cunningham Craig and J. H. Sinclair in 1913, and geological conditions are thought to be similar to the Turner Valley Field. Famous Oils, Ltd., is reported to have contracted for two tests. It is understood that the Blairmore-Dakota formation, which is encountered at some depth in the Turner Valley, outcrops at several points on the Sinclair structure. Officers of Famous Oils, Ltd, are: President, Harvey Bossenberry, Pincher Creek; vice president, H. C. McBurney, Coleman; managing director, Amos Craven, Calgary; director, Herdman McLeod, Coleman.

Skiff Field

In the Skiff Field, close to the Montana boundary, the Imperial-Devenish drilling program will, it is understood, start before April 1, when work will be started on Imperial-Devenish No. 2. The tentative location is understood to be some distance west of Devenish No. 1, which is in LSD 5, Section 27-5-14w4. Devenish No. 1 is now producing, though no further figures of its production have been made public since the first estimate of approximately 240 bbls. a dy. The Imperial-Devenish program calls for a a total of 10 wells. Illinois-Alberta Oils, Ltd., of Calgary, made a location in the Skiff Field last year, and will likely start drilling this spring, and United Oils, Ltd., of Calgary may drill.

In the Cypress Hills district, near Medicine Hat, Eagle Butte Oil Co., LSD 3, Section 31-7-4w4, is reported shut down at 1,000 feet. The location is isolated and transportation conditions have been bad. The test is being drilled by C. E. Roth in conjunction with the Rowe interests of Toronto; work will be resumed this spring as early as possible and the well pushed to completion. The area is some 30 miles south of Medicine Hat, and though 80,000 acres were blanketed by the Rowe interests, there has been considerable additional leasing by other companies.

In the Warner district, Gas Production & Transportation, NE Section 21-4-18w4 is down 3,280 feet and getting ready to resume drilling after underreaming and running casing to shut off a flow of water. At the present depth the well is within a few hundred feet of the potential oil horizon.

William Maughan is reported moving in his drilling outfit for the Madison Oils, Ltd., test on the Beaver Dome in LSD 8, Section 24-2-11w4. A cable tool outfit will be used, and the test is expected to spud in early in April. The location is close to the old Beaver well, which in 1914 got shows of oil and gas in the first rotary test drilled in Alberta, but later was abandoned owing to water troubles.

An Ontario company with headquarters at Toronto is reported to have taken a large block of acreage in the border area, and will put down a test this spring. The acreage is understood to be in the same general area as the Ontario-Alberta Development Co.'s test in Township 17-8w4 near Suffield.

The Canadian Exploration Co of Denver, Colo., is planning a test on the Wild Cat Hills structure 7 miles west of Cochrane, on acreage owned by the Canadian Western Natural Gas Co. The test will start drilling before July 15.

Erickson-Coulee

Just south of the boundary, Oil Producers Corp. of Canada, with office at Calgary, has spudded in two tests on a southerly extension of the Erickson Coulee structure. It is understood the company is drilling for gas on a contract with the Patterson-Brown interests of Spokane and Anaconda, and if production is secured it will be piped to Great Falls and points further south. The contract calls for completion of 10 out of a total of 30 wells before July 1, the leases covering 1,500 acres north of the Sweetgrass Hills area. A. J. McLay, vice president and managing director of the Oil Producers Corp., is in charge of the development work. A supply of 200,000,000 feet a day is being sought, and the tests are expected to tap a southerly extension of the Rogers-Imperial and Erickson Coulee structures, which gave a large gas production just north of the boundary. It is understood efforts were made some time ago to secure a permit for export of this gas to Montana, but were unsuccessful. The Rogers-Imperial well, drilled some years ago in LSD 9, Section 29-1-11w4, had a reputed production of 65,000,000 feet a day, which has since been shut in; the Imperial Oil, Ltd.'s, Erickson Coulee, in LSD 13, Section 8-1-12w4, is reported to have got 7,000,000 feet a day.

Viking Field

In the Viking Field, east central Alberta, the Hudson's Bay-Marland Oil Co.'s deep test will spud in by April 15. A cable tool rig will be used, and the test carried, if necessary, to 3,500 feet or more. Casing and equipment are on the ground or en route, some six carloads of casing having been delivered for the test. It is reported that a number of leaseholders have subleased their land to the Hudson's Bay-Marland company on a 10 per cent royalty basis.

In the Pincher Creek Field, southwestern Alberta, Alberta Gas & Fuel Co.'s No. 1 Doherty, Section 34-2-29w4, is reported to have resumed drilling. The company is an Alberta subsidiary of the Henry L. Doherty Co. and its drilling program calls for three tests in the area west of Hillspring. No. 1 was spudded in early in January. It is reported that a second test will be started in the spring. The Doherty interests have some 50,000 acres under lease, chiefly in southwestern Alberta.

On the Mill Creek structure, 9 miles west of Picher Creek, Mount Royal Oil & Gas Co., LSD 4, Section 7-6-1w5, is getting ready to resume after being shut down for the winter at around 1,000 feet. Considerable wet gas, estimated at 500,000 feet a day, was struck in the upper horizons, and a potential oil horizon is looked for at 1,500 feet.

Tar Sand Development

Since the Scientific and Industrial Research Council of Alberta was established in 1921, one of its main problems has been consideration of the bituminous or tar sands of northern Alberta. The tar sand exposures are found for more than 100 miles along the Athabaska River and its tributaries, and the minimum area underlain by this deposit is estimated to be about 1,000 square miles. There is an overburden of varying thickness, but the deposits are within easy reach of the surface. The first attempt at development about 1913-14 was by shallow drilling; several tests encountered oil too heavy to flow. Since then experiments have been made with various processes designed to extract the crude oil from the tar sand, or to separate the sand and the bitumen Latterly, the experimental work of the Scientific and Industrial Research Council, conducted by Prof. K. A. Clark, has consisted mainly in the development of a process for extracting the bitumen from the sand and in experiments in treating local roads with this bitumen to determine its value as a surfacing material.

The crude tar sands have also been used for experimental road building with good results. Separation of the bitumen from the sands would, however, greatly widen the market area, through the comparative decrease in transportation costs; and the product would also be adapted to many other purposes for which free asphalt is used. By the adaptation of a cracking process a certain percentage of gasoline could be extracted, if future conditions made such refining commercially profitable.

Discussing the problem, Doctor Clark recently pointed out that commercial development of the McMurray tar sand deposits would solve the problem of the Alberta & Great Waterways Railway, which was built by the province partly in anticipation of commercial development of the tar sands; while the province is also interested in a highway program which requires a large expenditure for graveling. Use of the tar sands or the bitumen would obviate the need of expenditures for road oiling.

Experiments in extracting the bitumen from the sands were begun in 1920, and a scheme for emulsifying the bitumen in water was developed through the laboratory stages until it is now carried out on a semicommercial scale in a plant at the Dunvegan yards in North Edmonton. In this process the sands are pretreated with a silicate of soda solution and introduced into hot water, whereupon an oil-in-water emulsion rises to the surface. The actual cost of production of the separaated oil was found to be approximately $1 per bbl., and the process is claimed to be economically feasible. It is anticipated that following the development of a successful process, a commercial industry will be undertaken to develop the tar sands and market the road oil and bitumen; and that in time a further development of the tar sands as a source of motor fuel is probable.

Ontario Field

In Kent County, Ontario, Union Natural Gas Co. has finished No. 278, Rad-

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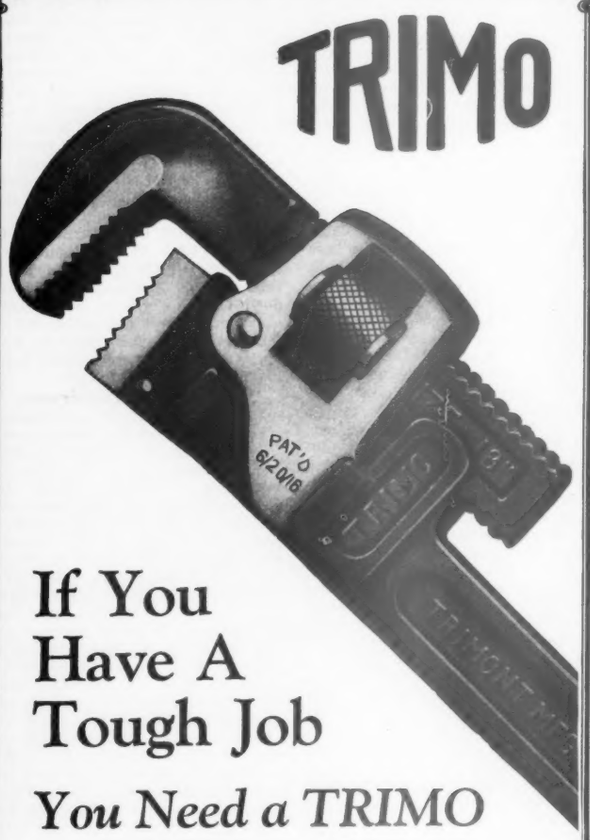

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mor farm, as a small gasser in the Tilbury sand. Union's No. 279, Shanks farm, finished a small gasser in the same horizon. Union's No. 280 is drilling on Radmor farm, west Lot 179, Talbot Road, Romney Township. Union's No. 281 on the Seth Barr farm, Lot 169, Talbot Road, is also drilling.

In Dover Township, Kent County, Ajax Oil & Gas Co., which recently finished No. 1 deep test as a fair gas producer in the Trenton limestone, is arranging to drill No. 2 close to No. 1.

In Dawn Township, Lambton County, Union Natural Gas Co.'s No. 21 is reported drilling on the west 100 acres of the Dan Tyrrell farm, Lot 24, west of Concession 6 Road. The location is 3,000 feet west of No. 19.

Near Arkona, the High Pressure Oil & Gas Co. of Windsor is reported to be starting No. 3 deep test. The location is in Rock Glen not far from the two deep tests previously drilled. A modern standard outfit has been secured for the drilling. No. 1 test apparently did not get to the top of the Trenton limestone, quitting around 3,000 feet. No. 2 at 4,000 feet or less, got some distance into the Trenton, the top of which at this point is stated to be around 3,900 feet. With the present outfit it will be possible to carry a test clear through the Trenton to the granite and secure conclusive results.

In the Oil Springs Field, Lambton County, the Oil Springs Oil & Gas Co. is reported drilling a deep test for gas, to be used to supply the village of Oil Springs.

LA.-ARK. WILDCATS

(Continued from Page 46)

was Benson Oil Co.'s No. 2 Wolff in Section 3-10-13, which was completed as a gas well with 14,500,000 feet in 28 feet of broken formation, total depth 3,084 feet. Located 1,100 feet northwest of No. 1 on the same lease in the same section, the gasser is 16 feet higher than No. 1, which was a 40-bbl. initial pumper, and is now pumping and flowing 62 bbls. per day. The gas is rich in gasoline content and was the objective of some lively bidding. It will probably prove the incentive for more exploration of the southwestern portion of DeSoto Parish, particularly in connection with extensive geophysical work under way in that part of DeSoto and further south in Sabine Parish.

Champagnolle More Active

Champagnolle had been in the doldrums until Simrall and others' No. 1 Findley, Section 12-17-14, 2 miles south and east of nearest production, drilled into what some think is a new sand. When this development became known things picked up considerably and now the well is the center of attention. This sand, topped at 3,167 feet and drilled into for 5 feet, showed for 8,000,000 to 10,000,000 feet with a spray of oil on drill stem test and casing has been set for a standard test. The top of this sand is 175 feet below the Crain sand from which the wells in the discovery group—Sections 1 and 2-17-14—are producing and 415 feet below the pay found by C. E. Murdock's No. 1 Gregory in Section 10-17-14, surface elevations considered. Location was made on the theory that the best structure is southeast of the acreage held by Ohio and Magnolia companies and east of the bulk of the Pure Oil Co.'s block and if it should come in as a producer, the well will bring El Dorado out of a state of almost complete inactivity and disinterest.

Rhodes and others, drilling No. 1 Union Saw Mill Co., in Section 14-19-11, in the southeastern corner of Union County, claim to have drilled 12 feet into what was thought to be chalk rock at 1,635-47 feet, but which they claim is volcanic ash such as some think is the Richland producing formation, and got a gas show on drill stem test. J. O. Moore and others have started another rank wildcat 18 miles southeast of Champagnolle development on the Pagan farm in Section 18-18-11, where they have a block of 2,000 to 3,000 acres. Location is south of Pitcher and others' and Lion Oil Refining Co.'s recent tests. Lyell and others' No. 1 Stegall in Section 11-17-13, in the Lawson-Urbana district, which loomed a year ago as a prospective gas field of large potentialities, is nearing the horizon from which Marine Oil Co. got its big initial volume and short-lived gas wells. It is drilling at 2,624 feet and Marine's production was from around 2,600-2,700 feet.

Mississippi

Developments in Monroe County, Mississippi have shaped themselves so that another well is to be drilled in that county to supplement, if possible, the supply of gas to Amory. Exercising its rights under its contract with the Amory Petroleum Co, Amory Natural Gas Co. has served notice that unless the producing company bolsters the quantity of gas available it will proceed to drill another well and charge the expense to the producing company. It is understood the distributors have made location 800 feet north of the Amory Petroleum Co.'s lone gas well on the Carter land in Section 7-13-17.

NORTHERN LOUISIANA

Bienville Parish

Humble Oil & Refining Co. has begun drilling No. 1 Anderson, a deep test, in Section 29-18-5, and has rig up for another wildcat in Section 16-18-7, No. 1 Calhoun.

Bossier Parish

H. S. Goodwin's No. 2 Curtis, Section 36-17-13, is drilling at 2,850 feet. William Gross and others have derrick up for No. 1 Stewart in Section 15-18-12, at Red Chute, 9 miles east of Shreveport. Rogers & Jensen's No. 1 Ledbetter, Section 7-18-11, is drilling below 400 feet. Triangle Drilling Co. and Empire Gas & Fuel Co. are rigged up on No. 1 Bulkley, Section 9-20-13, 3 miles north of Benton, the parish seat.

Caddo Parish

Empire Gas & Fuel Co. has rig up for No. 1 Nicholson, Section 33-17-14. Simmons & Harrell's No. 1 Mattie Myer, Section 21-17-13, is shut down at 652 feet. The Texas Company's No. 5 Hutchinson, Section 15-15-12, is in gas rock at 821 feet.

Catahoula Parish

Leonard Petroleum Co. is coring sandy shale at 2,790 feet on No. 1 Knott, Section 32-11-8, in which wildcat considerable interest is being shown because of gas showings in other Catahoula wells. Lochnager Oil & Gas Co. had a show in No. 3 Beazeley, Section 26-9-6, which threatened a blow-out at around 2,915 feet but got past it and is coring sandy lime at 3,070 feet. The Texas Company has derrick up for No. 1 Tensas Delta Land Co., Section 4-10-6.

Claiborne Parish

El Dorado Chief Oil Co. has completed repairs to rig and is drilling No. 1 Jones, Section 8-20-6, at 890 feet. Rudesael and others have built new derrick on No. 1 Meadows and have resumed trying to pull stuck drill stem, total depth 2,920 feet.

DeSoto Parish

American Controlled Oil Co.'s No. 2 Lanier, Section 5-11-11, tested dry at 2,800 feet and is shut down waiting orders. Baca Drilling Co.'s No. 1 Stevens, Section 12-11-16, is drilling 8-inch plug at 2,320 feet. Dixie Oil Co. is fishing for cable and tools lost in No. 1 Jenkins, Section 9-12-11, at 6,149 feet. R. O. Roy's No. 1 Tracy, Section 3-13-13, is drilling shale at 670 feet.

Lincoln Parish

H M. Harrell set 10-inch surface casing at 229 feet on No. 1 Griffin, Section 17-19-1w, and is drilling at 965 feet.

Monroe District

Morehouse Parish—Elbert Petroleum Co.'s No. 1 Morehouse Planting Co., Section 40-19-7, is shut down at 1,100 feet waiting orders. Gulf Refining Co.'s No. 1 Higginbotham, Section 42-20-7, began drilling March 8, set 15½-inch surface string at 160 feet and is drilling at 225 feet. The Texas Company has changed from cable tools to rotary outfit on No. 1 Myers, Section 15-22-7, and is drilling at 2,450 feet. United Carbon Co.'s No. 1 Bastrop Pulp & Paper Co., Section 18-21-6, is drilling at 1,250 feet.

Ouachita Parish—Phillips and others

are drilling No. 1 School fee, Section 16-16-4, with 15½-inch casing set at 212 feet. J. P. White is coring No. 1 Schmidt, Section 3-15-4, at 1,012 feet.

Union Parish—Barbour Oil Co.'s No. 1 Tugwell, Section 21-22-1e, is shut down at 2,425 feet waiting orders with junk in the hole. Moody & Seagraves No. 1 Robertson, Section 34-23-3, is running 6-inch, total depth 2,082 feet. Ouachita Natural Gas Co. began drilling No. 1 Hamilton, Section 22-19-1e, March 10, and has 12½-inch surface casing set at 205 feet.

Rapides Parish

Glenmora Petroleum Co. set 571 feet of 10-inch surface casing and is drilling gumbo at 1,930 feet on No. 1 Fee, Section 1-2s-2w. Minnesota Oil Co. got salt water on a drill stem test of No. 2 Wettermark, Section 13-5-4, at 1,700 feet.

Richland Parish

Gulf Refining Co. is reaming to bottom on No. 1 Millsaps, Section 8-17-6, total depth 3,131 feet. No. 1 Ches Wymond, Section 20-18-6, is drilling again after a fishing job at 2,506 feet. Moody & Seagraves' No. 1 McDonald, Section 9-15-5, is bailing to test a show in black shale at 2,504 feet. Noe & Meredith's No. 1 Boughton, Section 4-15-6, is drilling at 2,370 feet. Oliver & Masters set 6-inch casing at 2,290 feet on No. 1 Margie Hatch, Section 2-15-5; No. 2 Hatch, Section 2-15-5, is drilling 8-inch plug at 2,291 feet.

Sabine Parish

W. G. Doerne's No. 1 Pickering, Section 17-4-11, shut down for a week, is reaming to bottom, total depth 2,025 feet. R. L. Gay's No. 1 Mansfield Hardwood Lumber Co., Section 15-7-15, is drilling at 1,750 feet in shale and boulders. Zwolle Oil & Gas Co. No. 7 Bowman-Hicks, Section 14-7-14, is milling out testing tool, total depth 3,880 feet. The Texas Company has 12½-inch casing set at 145 feet on No. 1 Hamlin estate, Section 28-10-13, formerly S. P. Borden and others' No. 1 Hamlin.

Winn Parish

Ohio Oil Co. No. 2 Rolen, Account 1, Section 5-12-1w, was dry at 4,707 feet and is drilling at 4,747 feet. H. M. Roark's No. 3 Southern Minerals Co., Section 19-11-3w, is shut down at 1,200 feet.

ARKANSAS

Bradley County

Johnson & Adams No. 1 Southern Lumber Co., Section 12-12-12, is drilling at 2,780 feet.

Clark County

William Henry, trustee, is drilling No. 1 Clark, Section 34-9-21, at 520 feet.

Columbia County

George Dawley's No. 1 Gantt, Section 12-17-22, is in gumbo at 1,925 feet.

Dallas County

Deeman and others' No. 1 Hillman, Section 20-10-13, set 80 feet of 12½-inch surface casing and is drilling at 250 feet.

Franklin County

Empire Gas & Fuel Co. has temporarily abandoned No. 1 Patrick, Section 19-11-27, with the hole full of salt water, total depth 3,790 feet.

Miller County

Bruton and others' No. 1 Red River Farms, Section 2-17-16, is shut down for fuel, total depth 1,997 feet. Lenz and others' No. 3 Dale, Section 23-15-26, is drilling at 2,500 feet.

Pope County

Empire Gas & Fuel Co. No. 1 Wharton, Section 7-8-21, is underreaming 6-inch casing, total depth 3,618 feet.

Union County

W. R. Keever has derrick up for No. 3-B Ezell, Section 12-17-15, 300 feet south and 200 feet west, NE cor. NE SE; No. 2-B Kavanaugh, in the same section, is waiting on standard rig with 500 feet of fluid in the hole from 4 feet of sand, total depth 2,137 feet. Lyell and others' No. 1 Stegall, Section 11-17-13, is drilling at 2,624 feet. Magnolia Petroleum Co. began drilling No. 4 Cranston, Section 19-17-14, March 12, and is below 100 feet. J. O. Moore and others made location 125 feet north and 95 east SW cor. NE SW, Section 18-18-11, for No. 1 Pagan and have derrick up. Rhodes and others' No. 1 Union Sawmill, Section 14-19-11, is drilling at 1,640 feet. Simon and others have derrick up for No. 1 Jerry, Section 21-17-14.

MISSISSIPPI

Alcorn County

Alcorn Petroleum Co. set 6⅝-inch casing at 694 feet and cut off a fresh water flow and is drilling at 730 feet. They had a foot of sand showing a little bituminous matter but no oil.

Lee County

Moody & Seagraves' No. 1 Whitesides, Section 16-9-7, is drilling lime at 2,910 feet. Lee County Petroleum Co. is arranging to resume drilling No. 1 Hickman, Section 12-8-6, shut down for the past month at 950 feet.

Monroe County

Transcontinental Oil Co. and The Texas Company's No. 1 Day, Section 18-16-18, is drilling sandy slate at 3,150 feet.

LOUISIANA-ARKANSAS

(Continued from Page 46)

Union Parish—Industrial Gas Co. has 6-inch casing cemented at 2,070 feet in No. 2 Hill, Section 9-20-3; No. 1 Lewis, Section 14-20-3, has rig up and No. 1 Simpson is a derrick 1,980 feet east and 660 south of the center of Section 9-20-3.

Richland Parish

Dixie Oil Co. has set 15½-inch surface casing on No. 1 McCoy, Section 29-16-6, at 200 feet and is making hole. W. C. Feazel's No. 1 Duff, Section 21-16-6, is drilling at 1,160 feet and No. 1 Noble, Section 36-16-5, has set 90 feet of 12½-inch surface string and 8-inch at 854 feet. Gulf Refining Co. is drilling red gumbo at 2,685 feet in No. 3 Rhymes, Section 28-17-6. Moody-Seagraves' No. 1-A Sartor, Section 8-16-6, has 6-inch casing cemented at 2,300 feet; No. 1-C Sartor, Section 17-16-6, is in lime at 2,170 feet. Natural Gas & Fuel Corp. 3-A Thompson, Section 21-16-6, cemented 6⅝-inch casing at 2,272 feet and No. 4-C Thompson set 10-inch second string at 900 feet, casing off a fresh water sand permeated with gas from the crater well in the same section at around 200 feet. Southern Carbon Co. has derrick up for No. 1 D. R. Sartor, Jr., Section 9-16-6.

Sabine Parish

Magnolia Petroleum Co.'s No. 1-B Hall, Section 33-10-12, is rigged up ready to drill.

Webster Parish

Cotton Valley—Humble Oil & Refining Co. has rigged up for No. 6 Davis, Section 14-21-15, and has 15½-inch surface casing set at 460 feet on No. 2 Webb in the same section, which is to be a deep test for Trinity gas. Magnolia Petroleum Co. bailed dry on a small show of gas at 4,341 feet in No. 1 G. W. Cole, Section 27-21-10, and has 6⅝-inch casing cemented at 4,329 feet on No. 1 D. G. Cox, Section 22-21-10. Ohio Oil Co. tested 1,000,000 feet of gas at 4,600 feet in No. 38 Bodcaw, Section 15-21-10, but will go deeper. Woodley Petroleum Co. did not complete No. 1-B Cox, Section 23-21-10, as reported last week when it was turned in as a 3,000,000-foot gas well at 4,512 feet. It is shown on the field report this week as shut down waiting orders at 4,590 feet.

Sarepta and Shongaloo—Arkansas Natural Gas Co. is arranging to make drill stem test on No. 1 North Central Texas, Section 36-23-10, total depth 3,100 feet. It was completed February 3 with 1,500,000 feet of gas at 2,720 feet, and started going deeper two weeks ago. At its present level it is one of the deepest holes yet drilled in this district. C. H. Lyons and other's No. 1 Munn, Section 1-22-10, is drilling at 2,610 feet; No. 1 Porter-Wadley, Section 36-23-10, showed for 10,000,000 feet of gas at 2,700 feet but passed it up for better results expected a few feet lower; No. 2 Porter-Wadley, Section 29-23-9, set 300 feet of 12½-inch surface casing and is drilling at 1,200 feet. Magnolia Petroleum Co. set 13⅜-inch surface string at 309 feet on No. 1 C. O. Bailey, Section 29-23-9, and is drilling at 2,000 feet; No. 1 Camp, Section 36-23-10, has 13⅜-inch casing set at 295 feet. Harry Morris has set 12½-inch surface string at 150 feet on No. 1 Lewis, Section 15-23-9, and The Sun Oil Co. is drilling

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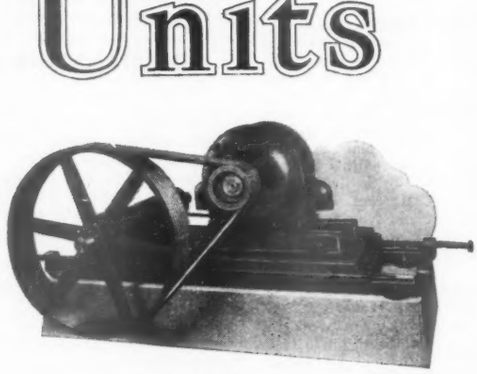

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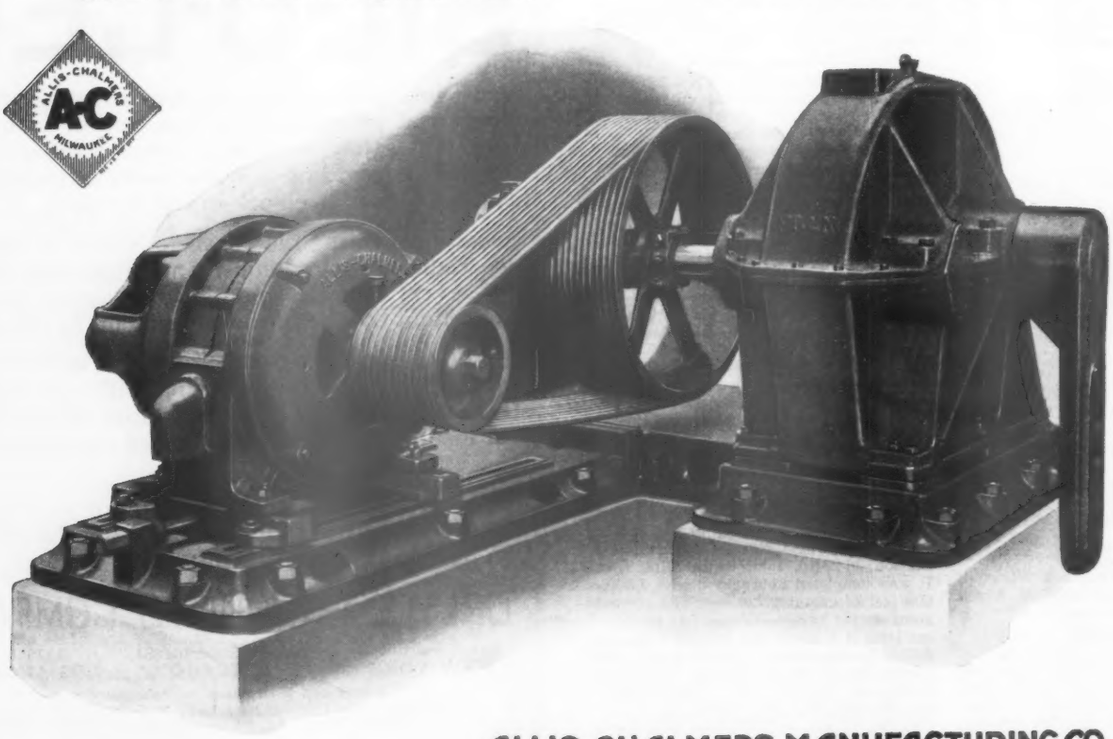

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No. 1 Haines, Section 30-23-9, at 2,000 feet.

ARKANSAS

Ouachita County

Smackover—Little Fay Oil Co. has 6-inch casing cemented at 2,025 feet on No. 5 Robertson, Section 25-15-16. Ohio Oil Co. cored sandy shale at 2,491 feet in No. 7 Cramer, Section 22-15-16. Phillips Petroleum Co. made location in the NW cor. SW SE. Section 34-15-15, for No. 1 Johnson and is drilling at 1,765 feet.

Union County

El Dorado—Mellor, Trustee, No. 1 Van Hook, Section 7-8-14, is waiting on standard rig to pump with 400 feet of fluid standing in the hole from 27 feet of broken sand, total depth 2,206 feet. Mountz and others' No. 6 Pratt, Section 8-18-15, is drilling at 2,192 feet.

Champagnolle—Eddy Jones is drilling No. 1 Stegall, Section 2-17-14, at 2,509 feet. He had the Nacatoch from 2,198-2,218 feet. Pure Oil Co. had 3,000,000 feet of gas at 2,972 feet in No. 1 Gregory, Section 10-17-14, but pulled liner and is going deeper. Drill stem test of Simrall and others' No. 1 Finley, Section 12-17-14, showed for 10,000,000 feet of gas and a spray of oil from a new sand at 3,169-74 feet and is setting 6⅝-inch casing for a standard test.

Smackover—Lion Oil Refining Co.'s No. 8 Hays, Section 4-16-15, is shut down at 1,087 feet because of high water in Smackover Creek.

EAST TEXAS

Harrison County

Clark and others began drilling No. 4 Furrh in the James Short survey March 8, set 100 feet of 10-inch surface casing and are drilling at 800 feet. Fuller & Fuller's No. 4 Furrh in the same survey began drilling the same day, set 10-inch at 105 feet and 6⅝-inch casing at 951 feet. Magnolia Petroleum Co.'s No. 2 A. G. Vincent in the R. W. Bedford Survey is shut down in sand at 1,101 feet for repairs to rig. Tylong Oil & Gas Co.'s No. 1 Armstrong in the Simpson Holloway Survey, is drilling at 2,720 feet. Waterman Brick & Tile Co. No. 6 Hickman, W. Pollock Survey, set 10-inch at 156 feet and is drilling at 2,000 feet.

Marion County—Trimount Petroleum Co.'s No. 7 Mebane-Stiles in the N. Gupton Survey set 10-inch surface casing at 102 feet, 6-inch at 2,310 feet and is waiting on standard rig to pump, total depth 2,370 feet.

Panola County—Llewellen & Hasenfuss are rigging up on No. 1 Hill in the E. F. Mitcheson Survey. Magnolia Petroleum Co. is drilling No. 1 T. C. Adams in the J. M. Birdsong Survey at 1,013 feet with 13⅜-inch surface string set at 1,013 feet for a deep test; No. 1 E. C. Tillery in the Jane Thorp Survey is shut down waiting orders after testing 846,000 feet of gas at 2,356 feet; No. 1 Leigh Trosper, B. Stevenson Survey, is drilling at 2,032 feet and No. 1 S. R. Vance is a location 670 feet north and 330 west SE cor. S. R. Vance 102 acres in the John Womack Survey. Natural Gas Products Co.'s No. 4 T. C. Adams in the Evans Brackins Survey has 10-inch surface casing set at 103 feet. The Texas Company's No. 19-B T. C. Adams in the Isom Hatcher Survey set 10-inch casing at 27 feet and is drilling at 750 feet. D. Thomason's No. 4 Crenshaw, John Womack Survey, set 10-inch pipe at 102 feet and cemented 8-inch at 980 feet; No. 5 Crenshaw is a location 330 feet south and west NE cor. Crenshaw land in B. C. Jordan Survey.

SOUTHWEST WILDCATS

(Continued from Page 49)

feet and if National picks up the same sand it will be done within a few days.

Duval County

National Oil Co.'s No. 1 Ball, Survey 16, located 450 feet to north line and 150 feet to east line, is drilling at 1,600 feet. Houston Oil Co.'s No. 1 Woods-Welder, Survey 233, located 1,750 feet to west line and 100 feet to north line, is drilling at 2,100 feet.

Hidalgo County

Queen City Oil & Gas Co.'s No. 2 Adams, 70 feet from No. 1, is skidding derrick. D. L. Smith Oil Co.'s No. 5 Fernandez, Porcion 46, Block 34, is drilling at 3,240 feet.

Jim Hogg County

M. I. Shaw and others' No. 1 Jones, Survey 381, Block 12, located 171 feet to south line and 486 feet to west line, at 1,804 feet is drilling in rock Holden and others' No. 3 Jones, Share 27, Block 13, is standing at 2,548 feet.

Starr County

The Texas Company's No. 1 Guerra, Porcion 68, Block 91, located 1,000 feet to east line and 150 feet to south line, is drilling on hard rock at 60 feet; No. 1-A V. Guerra, Porcion 68, Block 92, is a location 150 feet to south and east lines. Kusch Exploration Co.'s No. 1 Frank Doyno and others, Porcion 75, Block 13, is at 650 feet on hard rock. Clark & Woodruff's No. 1 Kelsey, at 568 feet is fishing for bailer. J. E. Harston's No. 1 H. Guerra, Survey 43, located 660 feet to south line and 1,320 feet to east line, is shut down at 1,120 feet. Deckle & McCarley's No. 1 Garcia, Survey 918, located 150 feet to south and east lines, is drilling at 1,710 feet.

Zapata County

Hill, Reiser & Weed's No 1 H. Rodriquez, Block 1, R. V. Hill subdivision, Villa grant, is a location 870 feet to northwest lines and 450 feet to northeast lines.

Bexar County

Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, 1,200 feet to east line and 325 feet to south line, is shut down at 1,000 feet for repairs on pump. Larsen-Walsh and others' No. 1 Oppenheimer, William Miller Survey No. 180, located 330 feet to south line of survey and 330 feet to center of survey, is drilling at 1,385 feet. C. J. LeCompte's No. 2 Diaz Survey 32, Block 4,283, located 450 feet north of No. 1, is shut down at 72 feet on rock.

Bastrop County

Mrs. McMurtray's No. 1 B. L. Duran, L. Flint Survey, 150 feet to northwest lines and 900 feet to southwest lines, is drilling at 2,950 feet. Noack & Laning's No. 1 Roemer, Isaac Casner league, is shut down at 1,935 feet. B. W. Owens' No. 1 Ed Jones, 150 feet to north and east lines of 34.5-acre tract, is rigged up.

Blanco County

C. W. Bates' No. 1 Herman Massey, Henry Manton Survey, 920 feet to north line and 660 feet to east line of survey, is drilling at 175 feet in hard rock. Robert Rodson's No. 1 Glasscock, Survey 50, located 150 feet to center east line, is in hard rock at 435 feet, corrected depth.

Caldwell County

Lu-Tex Oil Co.'s No. 1 Wilson, A. Floyd Survey, 2,320 feet to east line and 200 feet to south line, is standing at 40 feet. Detex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling on the Lockhart road, is shut down at 3,075 feet. H. C. Ratcliffe's No. 1 Brisco, J. Hindes Survey, center, is standing; No. 1 J. L. New, J. Hindes Survey, 150 feet to west line and 600 feet to south line, is shut down at 2,914 feet. Louis P. Schawe's No 1 Ted Schawe, Thomas Maxwell Survey, 6,111 feet to southwest lines and 6,986 feet to northeast lines of survey and 8 miles west of Lockport, is ready to spud in.

DeWitt County

Durbin Oil Co.'s No. 1 Gohmert, G. W. Brooks league, 175 feet to north line and 300 feet to east line, is shut down at approximately 2,700 feet. Empire Southern Oil Co.'s No. 2 Smith, Survey 3, and located three-quarters of a mile from No. 1, is standing at 3,150 feet. H. T. Roe's No. 1 Lienhard, D. J. Bibb Survey, center, is shut down at 950 feet.

Edwards County

Devil's River Oil Co. is moving in rig for a deep test in center of E half of Section 164, C.C.S.D.&R.G.N.G. Survey; No. 2 Turney, Section 167, same survey, 2,040 feet to north line and 660 feet to west line, is shut down at 440 feet with oil showing at 390 feet.

Frio County

Karnes and others' No. 1 J. J. Little is shut down at 607 feet. F. A. Lain's No. 1 Edwards, Hooper & Wade Survey, 920 feet to center north line, is shut down at 1,250 feet. P. A. Neilan's No. 2 Black-

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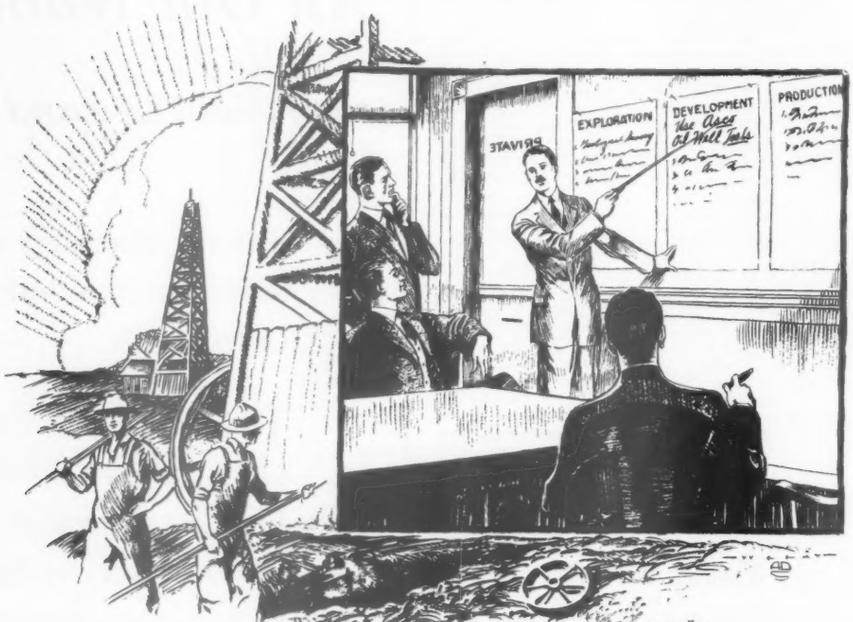

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aller, James Gouley Survey, is shut down at 2,960 feet, corrected depth.

Fayette County

National Oil Co.'s No. 1 J. C. Melcher, S. M. Williams league No. 1, located 300 feet to north and east lines of farm, has completed rigging up. Williams & Phalon's No. 1 Cervenka, Fayette County school lands, Block 97, has derrick up.

Goliad County

C. W. Simpson's No. 1 Ideus, W. H. Pendleton Survey, 156 feet to north line and 540 feet to west line, is shut down at 2,323 feet.

Gonzales County

Dunning & Pierce's No. 1 Wilkerson, R. Ward Survey, is drilling. W. D. Flynn's No. 1 Wilhausen, S. Bateman Survey, east central part of the lease, is drilling at 1,578 feet. Gonza Petroleum Co.'s No. 2 Elder, Block 11, is shut down at 1,250 feet; No. 1 Sinclair is shut down at 1,200 feet. L. L. Jones and others' No. 1 Campbell, Moore & Bridges Survey, southwest corner, is shut down at 1,980 feet. W. G. Malon's No. 1 Mrs. D. G. Staton, 3½ miles south of Slayden, is drilling water well. L. P. Unkel's No. 3 Johnson, deep test in the shallow Slayden Field, is drilling at 1,000 feet in gumbo.

Guadalupe County

O. W. Killam's No. 1 J. W. Calvert, Fulcher Survey, 110 feet to north line and 1,250 feet to west line and 6 miles east of Seguin, is drilling at 2,268 feet. J. M. Rentz' No. 1 Siligman & Freeman, Gustavus Chotwell Survey, 1,100 feet to southwest lines of farm and survey and 1,130 feet to southeast lines of farm, 6 miles west of Prairie Lea, has spudded in and shut down at 60 feet after setting surface casing.

Hays County

Orren Estess-H. J. Moore & King's No. 1 C. N. Sledge, Hunton & Jones Survey, 285 feet to northwest line of farm and 310 feet to southwest corner of Herzog 10 acres, has derrick up. J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, at 2,189 feet is swabbing through tubing and getting slight show of oil, some believing test is in top of the Pennsylvanian.

Jackson County

J. B. Douglas' No. 1 C. O. Lowrance, 12 miles northwest of Edna, is preparing to spud in.

Jim Wells County

Cushing Oil & Gas Co.'s No. 1 M. Perez, La Tinaja Survey, in de la Lara grant, 600 feet to north and east lines of survey and 6 miles west of Alice, is drilling at 125 feet.

Karnes County

Reynosa Oil Corp.'s No. 2 Butler, Block 43, located 1,000 feet south of No. 1, is still fishing at 2,007 feet.

Kerr County

Walker-Van Dyn's No. 1 Barfield, B. B. Peck Survey, 4,700 feet to north line and 450 feet to east line, is underreaming at 2,010 feet.

Live Oak County

J. A. Harper and others' No. 2 Nichols, 300 feet east of No. 1 at 1,165 feet has set casing and is ready to drill in to test oil showing. War. Wood Hunt's No. 1 McNeil, Jane Curry Survey, 4,000 feet to northeast corner and 3,000 feet to northwest lines, is ready to resume drilling at 2,050 feet.

Medina County

Pat M. Armstrong's No. 1 Mangold, Survey 62, located 200 feet to south and east lines at 940 feet, is showing gas and has set casing. Medina Oil Co.'s No. 1 Taylor, Survey 135, is shut down at 1,243 feet, corrected depth. Morgan-Walsh's No. 1 Haby, Survey 50½, located 330 feet to west line and 600 feet to south line, is drilling in sticky shale at 660 feet.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 1 Indio, center of Survey 14, at 4,360 feet is having trouble with crevice. Rycade Oil Corp.'s No. 1 Chittim, Section 129, Block 7, is at 4,295 feet waiting on water; No. 2 Chittim, Section 158, Block 7, is drilling at 4,127 feet.

San Patricio County

Houston Gulf Gas Co.'s No. 2 Waelder is rigging up. R. D. Kelly is making location for test 2 miles southeast of Odem. National Oil Co.'s No. 1 J. E. Sullivan, J. C. McMullen Survey, 500 feet to southwest corner, is to resume drilling at 1,805 feet. George B. Pickett's No. 1 Whitworth, NW NW Section 60, is drilling in hard rock at 2,770 feet; No. 1 Garrett is shut down at 3,030 feet. John Sigmund's No. 10 well, located 60 feet south of No. 9, is drilling at approximately 1,500 feet.

McMullen County

Houston Gulf Gas Co.'s No. 1 Lark, O'Boyle Survey, is shut down temporarily at 1,500 feet.

Travis County

Cranfil & Reynolds and Smith & Clark No. 1 Otto Schreiver J. B. Hurd Survey, 1,120 feet to northwest lines and 150 feet to northeast lines and 3½ miles southwest of Elvoy is drilling at 895 feet, in top of the chalk. T. P. Garrett's No. 1 Rowe, R. Hornsby Survey, 900 feet to north and east lines and 8 miles east of Austin, at 1,025 feet in top of Edwards lime, is showing sulphur water and is shut down.

Uvalde County

Pure Oil Co.'s No. 1 J. D. Smythe, Survey 687, located 740 feet to north line and 146 feet east of southeast corner of Survey 20, is underreaming at 1,525 feet, total depth 1,678 feet.

Victoria County

J. J. Elam's No. 1 Vol Kutchka, 200 feet to center north line of Kutchka subdivision, Section 40, at 1,400 feet, total depth, last 250 feet in red gumbo and shale. Humble Oil & Refining Co.'s No. 1 Jaeggli is drilling at 595 feet. R. M. Talbott's No. 1 Reeves, 2,000 feet to west line of the Reeves estate, total depth 1,825 feet, rig sold to J. J. Elam who may deepen test.

Val Verde County

T. W. Callahan and associates have let contract for test in NW of Section 67, Block Y, East Del Rio Oil Co.'s No. 1 Russell, Section 183, is shut down at 3,325 feet. Independent Operator's No. 1 Whitehead, SE SE Section 30, Block 4, I.&G.N. Survey, at 3,900 feet is preparing to resume drilling. Magnolia Petroleum Co.'s No. 1 Whitehead, Section 81, is drilling at 6,380 feet. O. O. Owens' No. 1 Mills, Section 128, Block 1, standing at 4,210 feet. W. V. Traves' No. 1 Wilson, Section 115, standing at 905 feet.

KANSAS FIELDS

(Continued from Page 44)

the scene of considerable leasing activity at this time.

The daily average production of the Churchill Pool of Sumner County by companies for the week ending Saturday, March 17, follows:

	Bbls.
Roxana Petroleum Corp.	10,992
Derby Oil Co.	662
Vickers Petroleum Co.	212
Wentz Oil Corp.	283
Selby Oil Co.	6
Washoma Oil Co.	56
Total (from 69 wells)	12,211

Oxford Pool

Daily production by companies in the Oxford Townsite Pool of Sumner County for the same period of time as the above table is:

	Bbls.
Roxana Petroleum Corp.	6,938
La Robb and others	187
Ramsey Brothers	170
Sharp and others	12
Pickard	138
Stanley & Jarvis	193
Ramsey & Fine	7
E. B. Shawver	168
Wassom and others	4,406
Derby Oil Co.	592
Palmer and others	1,101
Derby & Spencer	287
Mead Brothers	131
Total (from 61 wells)	14,330

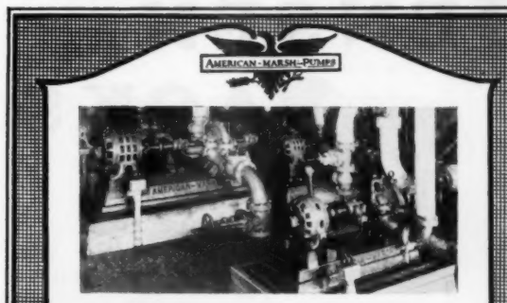
Barton County

McJolton and others moved the rig out for No. 1 Evanson, NE cor. NW, Section 34-17-11w.

Butler County

Leonard Petroleum Co. and Findiess made location for No. 1 Earll, NE cor. SW NW, Section 27-27-5. Davis, Hazlett and others' rig is at the location for No. 5 Lewis, SE cor. SW SW, Section 3-27-6.

Davis and others' No. 4 Lewis, SW cor. Section 3-27-6, made 140 bbls. from sand at 3,138-43 feet. Rosenthal and others' No. 10 Shaffer, SE cor. Section



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4-27-6, is a 100 bbl. well in sand at 3,136-50 feet. Allison & Fitzwilliams' No. 4 McGinnis, NW cor. NE NE, Section 9-27-6, has been completed for 200 bbls. in sand at 3,132-45 feet. Empire Oil & Refining Co.'s No. 1 Semich "B," NW cor. SE NW, Section 4-28-7, is dry and abandoned at 2,782 feet.

Coffey County

Finney and others moved a machine out for No. 1 Mitchell, SE cor. NE, Section 8-22-14. Wakefield and others made location for No 1 Winfield Townsite, Lot 7, Block 41, Section 33-32-4. T. B. Slick and others' No. 3 Dibbons, Lot 2, Block 1, Winfield Townsite, Section 22-32-4, is an old well rigging up to deepen from 2,366 feet.

Marland Oil Co's No. 2 School Land, C S half SW SE, Section 15-32-4, is making 1,000,000 feet of gas from sand at 2,520-24 feet. Kentucky Nitrogen & Oxygen Co.'s No. 3 Dobson, SE cor. SW NE, Section 24-33-6, has been completed for 4,500,000 feet of gas in sand at 1,026-34 feet. Brady and others' No. 1 Koestler, SE cor. NW NW, Section 35-34-3, is dry and abandoned at 2,250 feet.

Elk County

Harvey and others moved a machine to the location for No. 1 Fleak, SW cor. Section 21-30-11. McGinnis and others' No 1 Willard, NW cor. NE NE, Section 10-30-12, is spudding.

Greenwood County

Theta Oil Co. made location for No. 7 Frankhouser, SE cor. NW SE SE, Section 23-22-12. Murphy and others made location for No. 2 Olson, NW cor. SW SW SE, Section 6-25-9. Farr and others made location for No. 1 Badger, SE cor. SW, Section 33-25-10. Hood and others moved a machine to the location for No. 2 Butler, C NE SE, Section 15-26-11.

Darby Petroleum Corp.'s No. 7 Schwab, SW cor. SE SW NW, Section 30-22-13, made a 200-bbl well in sand at 1,704-67 feet. No. 8 Schwab, SW cor SE NW, Section 30-22-13, is making 200 bbls. from sand at 1,725-87 feet. Empire Oil & Refining Co.'s No. 1 Schwab "B," NW cor. SW, Section 30-22-13, made 80 bbls. from sand at 1,728-41 feet. Murphy and others' No. 6 Green, NW cor. NE NW, Section 14-23-9, is dry and abandoned at 2,368 feet. Hood and others' No. 1 Butler, C SE SE, Section 15-26-11, has been shut in for 2,750,000 feet of gas in sand at 608-32 feet. Smith & Rockhill's No. 1 McNair, NW cor. SE, Section 20-26-12, is dry and abandoned at 1,903 feet. Rogers and others' No. 1 Wagner, NW cor. Section 8-27-11, is a dry hole at 2,330 feet.

Jackson County

Smith and others' rig is under construction for No. 1 Wabaunce, NE cor. NW, Section 3-8-14.

Lyon County

Hawk and others' No. 1 Schroeder, SE cor. SW, Section 14-21-10, is dry and abandoned at 2,197 feet.

McPherson County

Herron and others' rig is being built for No. 1 Voshell, NE cor. Section 9-21-3w.

Marion County

Lassen and others' rig is on the ground for No. 1 Hansen, NW cor. SE, Section 28-17-4. Independent Oil & Gas Co.'s No. 1 Bevens, NE cor. SE SE, Section 21-17-4, has been completed for 80 bbls. in sand at 2,389-2,436 feet. Lariaux and others' No. 1 Fowler, SW cor. NW NW, Section 23-17-4, Lost Springs Pool, made 150 bbls. from sand at 2,362-2 414 feet. No. 1 Merilatt, SE cor. NW NW, Section 23-17-4, is making 200 bbls. from sand at 2,326-2,400 feet.

Morris County

Bopst and others made location for No. 1 Schwab, SW cor. NE, Section 31-16-5.

Rooks County

Streeter & Stearns made location for No. 1 Blank, NW cor. NE, Section 14-9-16w.

Russell County

Eskridge Oil Co.'s No. 1 Henderson, NE cor. SW NE, Section 15-13-12w, is drilling at 3,700 feet. Keys Petroleum Co has the rig up for No. 14 Mermis, SE cor. SW NE, Section 32-13-15w. Streeter & Stearns' No. 2 Mermis, NW cor. SW, Section 33-13-15w, is drilling at 385 feet. Johnson & Vickers' No. 1 Gorham, SW cor. NW, Section 33-13-15w, is spudding.

Sedgwick County

Gypsy Oil Co., Marland Oil Co. and others made location for No. 1 Wright, SE cor. NE SE, Section 12-26-1w.

Sumner County

Roxana Petroleum Corp. made location for No. 11 Community, Oxford Townsite, Section 14-32-2. Imo Oil Co. made location for No. 1 Quinn, NW cor NE SW, Section 21-33-2. Helmerick, Payne and others' rig is being built for No. 1 Melick, NE cor. Section 21-33-2. Harris & Haun made location for No. 1 Hendrix, NE cor. SW SW SE, Section 14-34-2. Location has been made for No. 1 Mireau, C NE NW, Section 23-34-2. The rig is being built for No. 1 Warner, C NW NE, Section 23-34-2. Shawver and others made location for No. 1 Post, NE cor. SE, Section 27-34-2. Morgan and The Texas Company's No. 1 Mynes, SW cor. Section 16-35-2, is spudding.

Harris & Haun's No 1 Tamsh, C SE SW, Section 14-34-2, is good for 9,000,000 feet of gas in sand at 3,422-25 feet.

Woodson County

Fields & Cross made location for No. 1 Eades, SE cor. NW SE, Section 24-25-13.

OKLAHOMA FIELDS

(Continued from Page 44)

made for No. 2-A Williams, NE cor. SW SW, Section 11-4-8w. Commerce Development Co. made location for No. 1 Pond, NE cor. NW SW, Section 13-4-8w. Oklahoma Gas Utilities Corp.'s No. 5 Farwell, NW cor. SW SE, Section 23-5-8w, has been completed for 25,000,000 feet of gas at 2,400 feet. Hall & Briscoe's No. 1-A Hill, SE cor. NW SW SW, Section 25-5-8w, cemented 8¼-inch casing at 2,715 feet, drilled to 2,400 feet and is making 18,000,000 feet of gas.

Oklahoma Gas Utilities Corp.'s No. 3 Serrata, SW cor. NW NW, Section 25-5-8w, has been completed for 9,000,000 feet of gas in sands at 2,188-2,450 feet. Little Nick Oil Co's No. 5 McCaughtry, NW cor. Section 35-5-8w, is shut in for 18,000,000 feet of gas in sands at 2,035-2,400 feet. Magnolia Petroleum Co.'s No. 1 Pursley, SE cor. SW NW, Section 8-4-6w, has been abandoned at 3,905 feet. Carter Oil Co.'s No. 9 Wolford, SE cor. NW SW, Section 16-3-5w, Carter-Knox Pool, has been abandoned at 2,558 feet. Joe Anderson's No. 1-A Wilde, NE cor. SE SE, Section 28-3-5w, made 75 bbls. from sand at 2,514-38 feet.

Grant County

Argo Oil Co. is rebuilding the rig to deepen No. 1-A Lane, NE cor. Section 27-27-3w, Deer Creek Pool. No 1 Swaggart, SW cor. SE SE, Section 15-27-3w, has been completed for 575 bbls. in sand at 4,088-4,106 feet.

Jefferson County

E. T. Daniels made location for No. 1 Black, NW cor. SW SW SE, Section 16-7s-5w.

Kay County

Tidal Oil Co. has the rig up for No. 3 Cole, C N half SE, Section 18-29-1. Sinclair Oil & Gas Co.'s No. 1 Hall, SE cor. NW, Section 19-27-1w, is plugging back to shoot at 1,900 feet.

Rogers and others moved a machine out to drill No. 1 Roberts, C NE NE, Section 5-26-1w, for shallow gas. Blackwell Oil & Gas Co's No. 2 Heighley, C SE NE, Section 29-25-1w, is spudding to drill for shallow gas.

Carter Oil Co. and others' No. 7 Shimp, C NE SW, Section 17-29-1, has been completed for 6,756-480 feet of gas in sand at 1,787-95 feet. Industrial Oil & Gas Co.'s No. 1 Athey, C SE SE, Section 35-28-1w, is making 1,325,000 feet of gas at 750 feet. Royal Oil & Gas Co.'s No. 1 Kelle, C SW SE, Section 33-28-1, is shut in for 1000,000 feet of gas from 900-905 feet. P. S. Wheeler's No. 1 Wheeler, SE cor. SW SW, Section 14-27-1w, has been abandoned at 917 feet. Royal Oil & Gas Co.'s No. 1 Courtney, NW cor. Section 8-27-1, is dry and abandoned at 1,305 feet Miller Brothers' No. 1 Anderson, NW cor. SE, Section 10-25-1, has been abandoned at 4,167 feet. The Prairie Oil & Gas Co.'s No. 2 Pratt, NE cor. Section

30-27-1w, has been abandoned at 1,865 feet.

Osage County

The Prairie Oil & Gas Co. made location for No 6, SW cor. NE SW NW, Section 21-17-6. Minnehoma Oil Co. made location for No. 3, CEL SW, Section 11-26-8. Peters Petroleum Co. is building the rig for No. 4, SE cor. NW SW, Section 26-25-9. Indian Territory Illuminating Oil Co. is rigging up No. 345, SW cor. NE SE, Section 2-25-11, to deepen.

Lewis Production Co.'s No. 5, NE cor. SW SW, Section 2-26-6, made 700 bbls. after a shot of 150 quarts in Burbank sand at 2,845-2,910 feet. Marland Oil Co.'s No. 4, SE cor. NE SE, Section 27-25-9, is a 75-bbl. well in sand at 2,118-90 feet. Standish Oil Co.'s No. 7, NW cor. SE, Section 2-25-11, made 15 bbls. from Bartlesville sand at 1,646-1,739 feet. A G. Oliphant's No. 1, NE cor. NW NW, Section 7-24-9, has been completed for 15 bbls. in sand at 2,610-21 feet. Osage Oil Syndicate's No. 1, NW cor. NE, Section 1-21-8, has been abandoned at 500 feet.

Pawnee County

Garber & Pulse and others' No. 1-A Gilbert, SW cor. SE, Section 21-21-8, is dry and abandoned at 1,720 feet.

Payne County

Fern Oil & Gas Co. and others' No. 1 Jameson, NW cor. NE SW, Section 15-19-5, is dry and abandoned at 3,280 feet.

Tulsa County

Caldwell & Page's No. 1 Hodge, SW cor. SE SE, Section 10-19-11, is spudding. Glidden Oil Corp.'s No. 2 Riverbed, CWL NW SE, Section 15-19-11, is spudding. No. 3 Riverbed, SW cor. NE NW SE, Section 15-19-11, is also spudding. Short & Maness and others' No. 1-A Stanwaite, NE cor. SE NW, Section 15-18-12, is drilling at 500 feet.

Superior Oil Corp.'s No. 10 McKee, SW cor. Section 6-19-10, made 55 bbls. from Red Fork sand at 2,030-73 feet. Glidden Oil Corp.'s No. 1-A Johnson, SW cor. NE, Section 15-19-11, is dry and abandoned in Turkey Mountain sand at 2,264-75 feet. Minshall and others' No. 5 Fife, SE cor. SW, Section 15-19-11, made 20 bbls. from Hominy sand at 2,162-70 feet Caldwell & Page's No. 1 Hawkins, NW cor. SW, Section 18-19-12, is dry and abandoned at 2,327 feet in Turkey Mountain sand. Jackson & Wise's No. 1-A Warrior, SW cor. NW NE, Section 21-19-12, has been completed for 5 bbls. in Red Fork sand at 1,537-53 feet. Berry and others' No. 3 Funk, NW cor. NE, Section 3-16-12, is a 5-bbl. well in Bartlesville sand at 1,414-1,525 feet.

Hughes County

Bunte and others made location for No. 1 Turner, NW cor. SE, Section 14-8-9. Carter Oil Co.'s No. 6 Alexander, NW cor. SE NE, Section 19-8-10, is dry and abandoned at 4,660 feet.

Okfuskee County

W. L Umburn's No. 1 Tiger, NW cor. SE NW, Section 2-10-11, is pumping 15 bbls. from sand at 1,738-48 feet.

Pottawatomie County

T. B. Slick has the rig on the ground for No. 1 Spangler, NW cor. Section 17-7-2. Independent Oil & Gas Co. has dug the cellar for No. 1 Jordan, SE cor. Section 10-7-4, St. Louis Pool. Magnolia Petroleum Co. made location for No. 2 Singletary, NW cor. SE SW, Section 14-7-4. Location has been made for No. 3 Shipman, SE cor NW NE, Section 19-7-4, Pearson Pool. Location has also been made for No. 1 Shipshewohno, SW cor. NE, Section 19-7-5. T. B. Slick has the rig on the ground for No. 1 Harper, NE cor. NW SE, Section 19-7-5. Magnolia Petroleum Co. made location for No. 1 Fyke, NW cor. SW SE, Section 20-7-5.

Magnolia Petroleum Co.'s No. 2 Risenhoover, NE cor. SE NE, Section 14-7-4, is flowing 14 bbls. from sandy lime at 3,586-95 feet. McCulloch Oil Co 's No. 1 Long, SE cor. SW SW, Section 18-7-4, is dry and abandoned at 4,060 feet. Gypsy Oil Co 's No. 2 Cecil, NW cor. SW NE, Section 19-7-4, Pearson Pool, made 490 bbls. from Hunton lime at 3,802-91 feet. The Prairie Oil & Gas Co.'s No. 1 Hembree, SW cor. NE SE, Section 18-7-5, has been completed for 60 bbls.

Seminole County

Carter Oil Co.'s No. 1 C. Fish, NW cor. SW, Section 12-7-6, Little River Pool, is rigging up rotary tools. T. B. Slick has the rig up for No. 1 Williams, NE cor. SE NE, Section 15-7-6. Sands Petroleum Corp. made location for No. 1 Harrison, SW cor. NW SE, Section 4-7-7. Carter Oil Co. has the rig on the ground for No. 1 C. Spillman, SE cor. SW SW, Section 7-6-8. Mid-Continent Petroleum Corp. has built the rig for No. 6 Fleet, NW cor. SE, Section 7-5-8, Allen Field. No 7 Fleet, NW cor. SE SE, Section 7-5-8, is rigging up rotary tools. The rig is up for No. 8 Fleet, NE cor. SW SE, Section 7-5-8. The rig is also up for No. 9 Fleet, SE cor. NW SE, Section 7-5-8. No. 10 Fleet, SE cor. SW SE, Section 7-5-8, is rigging up rotary tools.

Sinclair Oil & Gas Co. has the rig up for No. 1-A Amos, SW cor. NE, Section 7-5-8. The rig has been erected also for No. 1-C Amos, NE cor. SW, Section 7-5-8. The Texas Company is building the rig for No 4 Hyde, NW cor. NE S:, Section 7-5-8. The rig is also being built for No. 5 Hyde, SW cor. NE SE, Section 7-5-8. Anderson & Pritchard's No. 1 Culley, SE cor. SW NE, Section 18-5-8, is rigging up rotary tools. Gilcrease Oil Co. has built the rig for No. 1 Reed, NE cor. NW NE, Section 18-5-8. Location has been made for No. 2 Reed, NW cor. NE, Section 18-5-8. Louisiana Oil Refining Co. is building the rig for No. 2 Reed, SE cor. NE NE, Section 18-5-8.

Snowden & McSweeney's No 2 Epply, NW cor. NE, Section 15-10-8, has been abandoned at 3,960 feet on account of a fishing job. Barnsdall Oil Co.'s No. 5 Sango, SE cor. SW NW, Section 1-9-5, is dry and abandoned at 4,415 feet. The Texas Company's No. 1 Brinsfield, NE cor. NW, Section 10-9-8, has been shut in for 2,500,000 feet of gas in the Hunton lime at 4,348-57 feet. Tidal Oil Co.'s No. 8 Harjoche, NW cor. SW, Section 10-8-6, Bowlegs Pool, topped Wilcox sand at 4,675 feet, drilled to 4,683 feet and was abandoned.

Magnolia Petroleum Co.'s No. 3 Rhoades, SW cor. NW SW, Section 12-8-6, made 252 bbls. on the swab from Wilcox sand at 4,102-31 feet. No 4 Pattey, NE cor. SE NE, Section 35-8-6, Little River, made 200 bbls. from Wilcox sand at 4,289-99 feet. Carter Oil Co.'s No. 1 R. Smith, SW cor. Section 7-8-7-, is dry and abandoned at 4,435 feet. Mid-Continent Petroleum Corp.'s No. 2 Fleet, NE cor. NW SE, Section 7-5-8, Allen Pool, had an initial production of 735 bbls. in sand at 2,550-72 feet. The Prairie Oil & Gas Co.'s No. 1 Garman, SE cor. Section 22-8-8, has been abandoned in Cromwell sand at 3,570-75 feet.

Carter County

Boring and others' No 2 Walker, NW cor. SW SE NW, Section 10-4s-2w, is rigging up rotary tools.

Garfield County

Marland Oil Co.'s No. 1 Disney, C NW SW, Section 24-24-3w, has been abandoned at 5,125 feet.

Garvin County

Magnolia Petroleum Co.'s No. 2 Ringer, SE cor. NW NE NE, Section 15-1-3w, is dry and abandoned at 1,930 feet.

Logan County

Roxana Petroleum Corp. is digging the cellar for No. 2 Ross "B," SE cor. SW SE, Section 19-19-4w, Lovel area. The rig is being built for No. 2 Stephens, NW cor. SW, Section 29-19-4w. Cellar is being dug for No 3 Sebranek, NW cor. NE, Section 30-19-4w.

Okmulgee County

Independent Oil & Gas Co. and Devonian Oil Co.'s No. 8 B. Wisener, C SW SE, Section 7-15-13, is drilling deeper at 2,680 feet. J. L. Selby's No. 16 Flint, NW cor. SE NE, Section 26-14-14, has drilled to 965 feet and is shut down. Elm Oil Co.'s No. 10 Rentie, SE cor. Section 13-13-14, is drilling at 800 feet. Billy Gene Oil Co.'s No. 1-A Monday, NE cor. SE, Section 19-13-14, is spudding

Eagle Picher Lead Co.'s No. 1 Conner, SE cor. SW, Section 4-12-14, is dry and abandoned at 2,870 feet. G. N. Buzzard

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City..... State.....

and others' No. 1 N. Thompson, NW cor. NE NE, Section 27-11-13, has been abandoned at 3,800 feet.

Muskogee County

Mitchell Oil Co. is rigging up a machine for No. 2 M. Barnett, SE cor. SW SW, Section 35-16-15. P. Boyle and others moved out a machine for No. 5 Barnett, C N half SE, Section 8-15-15. Bryan & Emery's machine is at the location for No. 1 Barnett, CSL SE NE, Section 8-15-15. W. B. Pine and others moved a machine out for No. 10 Simmons, NW cor. NE NW, Section 9-15-15. C. F. Blackwood has a machine at the location for No. 2 Townsite, Lot 31, Block 16, SE cor. NE SW, Section 6-14-19. Decius & Garrett's No. 1 Townsite, Lot 3, Block 16, SE cor. NE SW, Section 6-14-19, is spudding. W. J. Metzger and others moved a machine out for No. 7 C. Crittenden, NW cor. SW NE SE, Section 6-14-19. A. Tillman and others' No. 1 Cobb, SE cor. NE SW SW, Section 6-14-19, is spudding.

Towner & Witt's No. 1 Townsite, Lot 7, Block 16, SE cor. NE SW, Section 6-14-19, is spudding. Towner & Witt's No. 1 Wade, SE cor. NW SE NW, Section 6-14-19, is a machine on the ground. Walton Oil Co.'s No. 2 Kell, CNL SE SW, Section 6-14-19, is rigging. O. Grosscurth and others' No. 1 Kell, SE cor. NE NW, Section 7-14-19, is rigging. J. R. Graves and others' rig is on the ground for No. 4 Flowers, CSL SE NW, Section 5-13-16. Sioux Oil Co. has a machine at the location for No. 2 Jordan, NE cor. SE SE, Section 14-13-18.

P. Boyle and others' No. 2 Simmons, CWL SW NE, Section 10-15-15, has been abandoned at 1,653 feet. Tidal Oil Co.'s No. 8 E. Sanders, NW cor. SE SW, Section 34-15-18, has been shut in for 4,000,000 feet of gas in sand at 1,807-45 feet. J. F. Blackwood and others' No. 1 Bennett, SE cor. NE SW, Section 6-14-19, was shot with 50 quarts in sand at 514-31 feet and made 280 bbls.

Pontotoc County

Indian Territory Illuminating Oil Co. has erected the rig for No. 2 Taylor, SE cor. SW SE, Section 29-5-5. J. A. Hull has moved rig material out for No. 1 Brydid, NW cor. SE, Section 33-5-5. W. C. Hughes' No. 1 Gann, NW cor. SE, Section 15-4-7, is drilling at 560 feet. Ada Development Co. is building the rig for No. 1 Lloyd, C W half NE, Section 7-3-7.

Westheimer and others' No. 1-A Milner, SE cor. Section 8-5-8, Allen Field, is pumping 20 bbls. from sand at 803-17 feet. C. B. Shaffer's No. 5 Yoakum, SW cor. Section 9-5-8, has been completed for 350 bbls. in broken sand at 2,445-97 feet. Homaokla Oil Co.'s No. 5 McCall, SE cor. NW, Section 17-5-8, is pumping 20 bbls. from sand at 2,410-49 and 2,452-70 feet. W. R. Ramsey's No. 1 McElroy, NW cor. NE SW, Section 17-5-8, is making 30 bbls. J. C. Crosbie and Hick's No. 1 Nowbaby, SE cor. NE SW, Section 8-4-7, has been completed for 55 bbls. in sand at 1,044-54 feet.

Wagoner County

O. A. Sewell and others' No. 2 McIntosh, CEL SE NE, Section 18-17-16, has been abandoned at 1,658 feet.

Stephens County

Martin & Smythe made location for No. 1 Vestal, C NE SE, Section 20-2-5w. Medlin and others' rig is being erected for No. 2 Burk, NW cor. NE, Section 34-1s-8w. Snodgrass Oil Co.'s No. 4 Malernee, NE cor. NW, Section 34-1s-8w, is drilling at 1,650 feet. C. R. Smith has the rig up for No. 1 Miller, SE cor. Section 25-1s-4w. Wirt Franklin Oil Corp. made location for No. 1 Fobb, NE cor. SE, Section 12-2s-8w. Pace and others' rig is going up for No. 1 Wilson, NE cor. NW, Section 12-2s-8w. George Pace's No. 3 Allen, NE cor. NW NE, Section 3-2s-8w, is drilling at 50 feet.

Big Twelve Oil Co.'s No. 5 Taliaferro, SE cor. SW, Section 27-1s-8w, is pumping 40 bbls. from sand at 1,964-1,702 feet. Magnolia Petroleum Co.'s No. 2 Green, NW cor. NE, Section 13-1s-4w, has been shut in for 46,000,000 feet of gas in sands at 2,600-25 feet. Murphy Oil Co.'s No. 11 Fobb "B," NW cor. NE SW, Section 12-2s-8w, has been abandoned at 2,135 feet. American Pipe Line Co.'s No. 1 Bond, NW cor. SW, Section 7-2s-7w, flowed and pumped 302 bbls. from sand at 1,533-39 feet.

GULF COAST FIELDS

(Continued from Page 51)

Kelso Bayou offsetting Calcasieu Oil Co.'s No. 2 Watkins on the south, was brought in making only gas with only a spray of oil estimated at 150 bbls. daily with lots of salt water from sand at 3,884 feet. No. 2 Watkins was abandoned two weeks ago after hitting the salt.

With the abandonment of the No. 2 Watkins, all of Calcasieu Oil Co.'s operations now are being centered on the south side of Kelso Bayou. This company's No. 3 Caldwell is drilling around 1,600 feet and its No. 1 Dorion at 4,440 feet. The latter has missed the sand encountered by the company's other three producers around 3,976 to 3,996 feet.

On the Allen Dome in Brazoria County Roxana Petroleum Co.'s No. 4 Allen Saturday was swabbing at the rate of only about 10 bbls. of oil daily from sand at 4,913 feet. No. 1 Random was coring hard, sandy shale at 4,887 feet.

At Raccoon Bend, Austin County, Humble Oil & Refining Co.'s No. A-1 Grawunder is drilling in rock at 1,024 feet and its No. 1 Wilson in tough shale at 3,173 feet. Humble Oil & Refining Co.'s No. 1 Sugarland at DeWalt, Fort Bend County, another closely watched wildcat, is drilling shale at 3,506 feet.

Texas Wildcats

Alexander & Lyle have started a new test in Austin County, their No. 2 Gobel, 50 feet from No. 1 in the Cummings Hacienda Survey. Ten-inch surface casing has been set at 70 feet. Weadock and associates' No. 1 Ward, Austin County, is drilling around 1,400 feet. Stanfield & Meyers' No. 1 McNeill, Brazoria County, encountered a water sand at 1,364 feet.

Of some interest among new tests starting is Martin and associates' No. 1 Stoltz, 2,850 varas south and 180 varas west from the NE cor. of the V. Urrutia Survey No. 12, Burleson County.

B. A. Johnson's No. 1 Breeding, Colorado County, has been shut down at 2,245 feet. E. M. Masterson has started a new test in Colorado County, the No. 1 Auerback.

At Hockley, Humble Oil & Refining Co.'s No. 2 Texas-Warren has spudded in and Saturday was drilling sandy shale below 60 feet. No. 2 Warren was in shale at 4,492 feet. The Texas Company has started a test, No. 1 Watson, Houston County, 1,000 varas from the north line and 3,000 varas from the east line of the James J. Thomas Survey.

Gulf Production Co. is rigging up for its sixth Sanborn test at Hawkinsville, Matagorda County, No. 5 being abandoned recently.

Louisiana Wildcats

Roxana Petroleum Corp. has a rig up for No. 1 Watkins in the Black Bayou district of Cameron Parish and is getting ready to start drilling. This company's No. 1 Wilbert at White Castle, Iberville Parish, is coring sandy shale showing a little oil at 2,204 feet.

Newton Drilling Co.'s No. 1 Dupre, south of Lake Charles, Calcasieu Parish, is drilling below 3,880 feet. Jefferson Oil & Development Co.'s No. 2 Salt Mine, Jefferson Island, Iberia Parish, encountered a sand and shale showing gas at 4,379 feet.

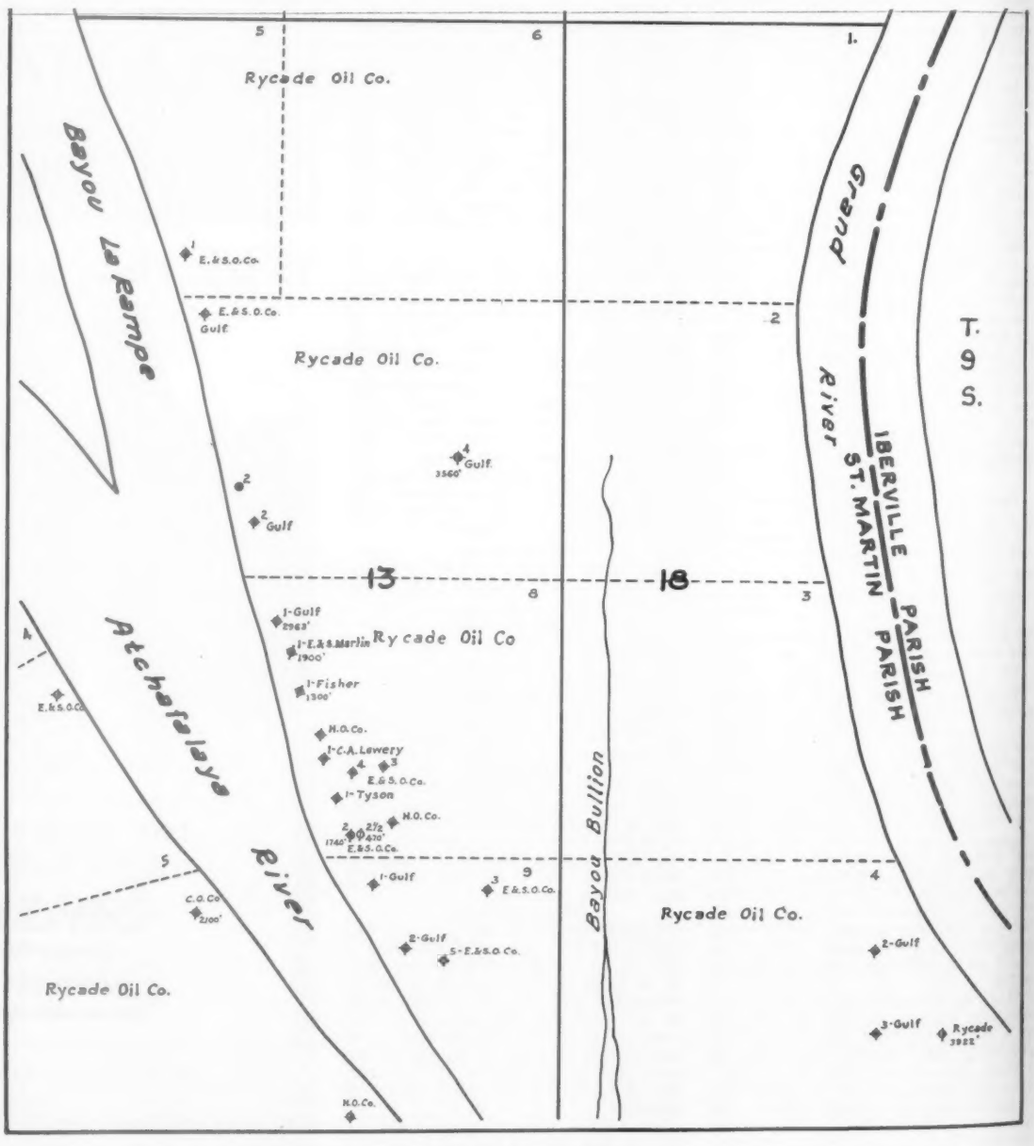
Louisiana Land & Exploration Co. is starting drilling in its No. 2-A Vermillion Bay, at Vermillion Bay, Iberia Parish. Its No. 1 Averys Island is down around 4,870 feet. Ohio Oil Co. is getting ready to start drilling No. 2 Burke on the Hager Dome, St. Martins Parish.

Pierce Junction

Two good wells at Pierce Junction, south of Houston, Harris County, together with a string of several good wells at Spindletop since the first of the month served to boost production of Gulf Coast fields the past week with the results that there was an increase in the daily average output of 8,521 bbls. Daily average production during the week was 124,858 bbls.

Not considering new wildcat wells, two new wells at Pierce Junction were among the most important completions in coastal fields. These, with another workover well at Pierce Junction, added between 3,500 and 4,000 bbls. of flush production to that field.

The remainder of the completions most-



Map of Bayou Boullion district.

ly were small pumpers or abandonments, scattered among the fields. Some revival of activity in the old Barbers Hill Field of Chambers County, is expected over Bennett Petroleum Co.'s No. 1 Kirby. This well which has been flowing around 400 bbls. daily, will be put on the pump this week and is expected to make around 800 bbls.

Daily average production by fields for the week ending March 17 was:

Spindletop	38,278
Saratoga	989
Batson	1,412
Goose Creek	7,307
Sour Lake	3,495
Hull	11,715
Big Creek	1,972
Columbia	8,199
Humble	3,991
Pierce Junction	9,708
Blue Ridge	7,554
Markham	200
Orange	4,099
Damon Mound	825

Daily average production in Southwest Texas and East Central Texas fields declined during the week as indicated by the following tables:

Southwest Texas

Somerset	2,801
Lytton Springs	1,477
Dale	1,151
Luling	13,890
Miscellaneous	7,700
Total this week	27,019
Total last week	27,279
Decrease	260

East Central Texas

Mexia	7,665
Cedar Creek	650
Nigger Creek	800
Currie	507
Wortham	1,976
Richland	546
Powell	12,076
Total this week	24,219
Total last week	24,603
Decrease	384

View of Rycade Oil Corp.'s producer in St. Martin Parish, Louisiana.

Dayton	235
South Liberty	2,427
High Island	306
Moores Field	100
Boling	2,894
Nash Dome	2,600
Barbers Hill	550
Vinton	4,844
Starks	200
Edgerly	1,137
Evangeline	965
Lockport	3,981
Sweet Lake	1,140
Sulphur	170
Hackberry	1,365
Sorrento	850
Bayou Boullion	1,250
Miscellaneous	100
Total	124,858
Total last week	116,337
Increase	8,521

Blue Ridge—Fort Bend County

By the close of the week no wells had been completed in Blue Ridge but Blakely & Means' No. 1 Blakely was being bailed for a test of a sand around 3,400 feet. H. R. Cullen and associates have a derrick under way for No. 2 Lafferty, a location for which was staked 50 feet south and 200 feet east from No. 1, completed two weeks ago. H. R. Cullen's No. 1 Luscher has a fishing job at 4,210 feet. Cunningham Production Co.'s No. 1 Blakely tested salt water at 2,935 feet. H. B. Gordon has set strainer in No 2 Blakely for a test at 3,622 feet. Gulf Production Co. has rigs up and is starting drilling in two new wells, No. 11 Blakely and No. 12 Luscher. Navarro Oil Co. has a rig up for No. 4-B Robinson heirs and Sinclair Oil & Gas Co. is rigging up for No. 1 Davidson fee. Watts Brothers Oil Co. is rigging up for No. 1 Scott. Sam Watts and associates' No. 3 Blakely is drilling around 275 feet and H. G. Nelms' No. 1 Overly is down 1,895 feet.

Big Creek—Fort Bend County

Gulf Production Co.'s No. 39 Davis is drilling at 3,618 feet. This company's No. 45 Davis is drilling in a sidetracked hole at 2,750 feet, the test originally having been drilled to 3,540 feet. The Texas Company's No. 3 Wheat is sidetracking at 4,075 feet.

Nash Dome—Fort Bend County

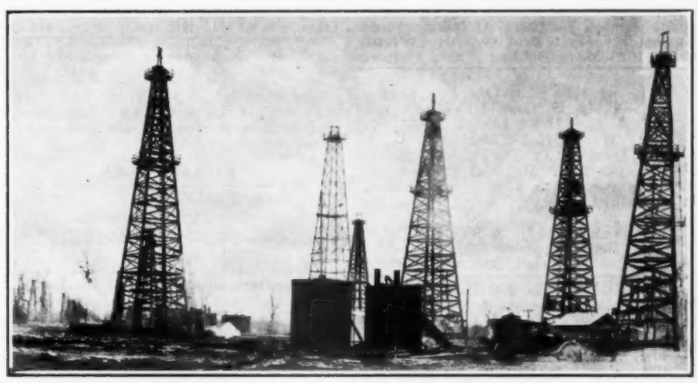
Rycade Oil Corp. is moving the rig from No 9 Wisdom, completed last week, to No. 16 Wisdom to deepen the latter well. No. 16 originally was completed last November 5, making 30,000,000 feet with a spray of oil from a total depth of 4,222 feet. No. 23 Wisdom, a new test, is drilling gumbo and lime at 2,560 feet. No. 24 is in hard sand lime at 1,348 feet after having set 12½-inch surface casing at 1,210 feet. A rig is up for No. 25 Wisdom and No 13 Nash is drilling lime rock at 2,779 feet.

Hardin County Domes

At Batson, Ada Bell Oil Co.'s No. 118 Producers has been completed pumping 5 bbls. daily at 1,052 feet. Capitol Oil Co.'s No. 10 Hodges is drilling around 1,638 feet and East Batson Oil Co.'s No. 5 Conzelman-Crary at 1,069 feet. J. R. Everett's No. 3 King is drilling at 1,095 feet. Three miles south of Batson, Guedry Drilling Pool has staked a location for a wildcat, No. 1 Guedry.

Gulf Production Co.'s No. 25 B.B.B. &C., at Saratoga, has been completed pumping 10 bbls. daily from sand at 1,052 feet. This company has staked a location for No. 26 and has a rig up. Rio Bravo Oil Co.'s No. 81 Jordon is drilling at 1,167 feet.

At Sour Lake, Gilbert Oil Co.'s No. 101 fee tested salt water at 643 feet. Gulf Production Co.'s No. 1 Hamman is drilling at 3,290 feet and its No. 2 Thomson at 3,950 feet. Theis Oil Co. has abandoned temporarily its No. 3 Merchant. This was an old well deepened and which tested salt water. Minor Oil Co.'s No. 82 fee is making 82 bbls. net oil from sand at 776 feet. Five miles northwest of the field, Chappell Hill Oil Co. has a rig up for No. 1 Hale.



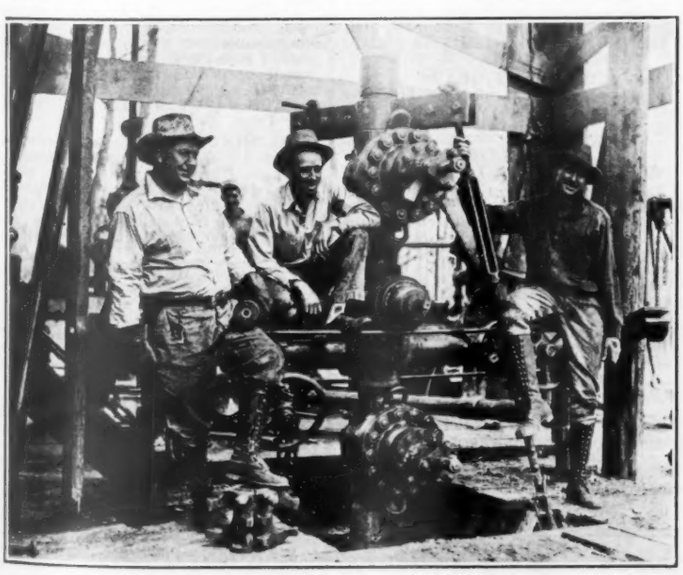
New activity in the extension 500 feet north of the South Liberty Field, showing a portion of the old field at the left.

Pierce Junction—Harris County

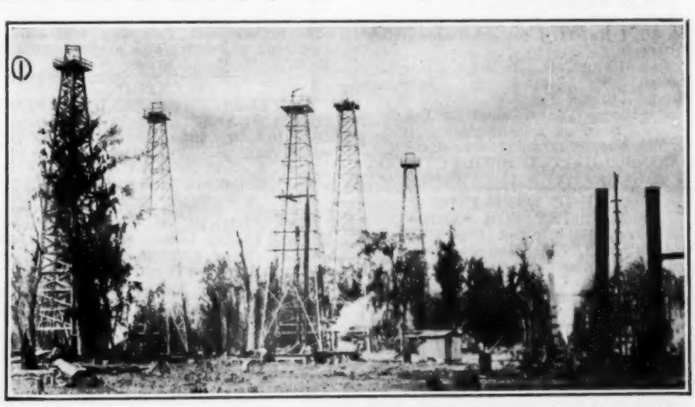
Pierce Junction got two good producers during the week and another 400-bbl. well. Rio Bravo Oil Co.'s No. 8-A Settegast was completed making 2,470 bbls. of pipe line oil daily from sand at a total depth of 4,493 feet and the same company's No. 2 G.H.&S.A. came in making around 1,500 bbls. daily from sand at 4,443 feet. Navarro Oil Co.'s No. 2 Cain is flowing 400 bbls. daily from sand at 4,630 feet.

Navarro Oil Co.'s No. 2-A Cain is fishing at 5,350 feet. Rio Bravo Oil Co.'s No. 1 Settegast, an old well deepening, is drilling below 3,755 ft. No. 101 G. H.&S.A. is drilling at 5,738 feet, and No. 8-B Settegast is being rigged up. T. G. Shaw also has a rig up for No. 2 Fitzsimmons and is starting drilling. Anderson & Plummer's No. 2 Whitehead is drilling at 4,548 feet. Joe Bashara's No. 2 fee is down 4,425 feet, and Cullen and associates' No. 4 Howe is drilling at 4,464 feet. Gulf Production Co.'s No. 24 Taylor is down 4,380 feet, No. 25 Taylor 1,668 feet and No. 1 Saunders is making drill stem to deepen at 4,215 feet. Leonard and associates' No. 1 Settegast is drilling at 5,887 feet. Moody Corp.'s No. 3 Hume is drilling at 4,805 feet, No. 2 Whitehead at 3,340 feet, while No. 1

(Continued on Page 138)



"Red" Robertson; C. A. Akin, field superintendent; and A. L. Prim, driller, at Rycade Oil Corp.'s new well in St. Martin Parish, Louisiana.



The most active drilling spot in Gulf Coastal territory now is north of the South Liberty Field, Liberty County, where two new extension districts have been opened. The picture shows the new rigs running around The Texas Company's No. 1 Green, a mile north of the South Liberty Field, all having been started in the last two or three weeks since the discovery well came in flowing better than 2,000 bbls. of pipe line oil from sand at a total depth of 2,230 feet. The derrick in the background at the right is No. 1 Green. The derrick in the foreground at the right is Sun Oil Co.'s No. 1 Abshier, while that between it and the No. 1 Green is The Texas Company's No. 3 Green. In the foreground at the left is Abercrombie & Harrison's No. 1 Lacour while in the background offsetting it is The Texas Company's No. 2 Green. Tentative locations for a dozen other tests have been staked in this cluster.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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FOR SALE at attractive prices, 6 only 123′ McGraw Baughman & Bearley Turnbuckle Derricks and other drilling equipment, located northern Oklahoma near Kansas line. Write or wire G. H. Stevens, Room 1021 Mayo Bulding, Tulsa, Okla.

SPECIAL
4″ O. D. GAS LINE
16 MILES LONG
Welded in 35′ lengths
Made from 4″ O. D. Tubing; weight 5½ lbs. per foot. Material cleaned, cut with plain ends; A-1 in every respect. Located in Louisiana. Special price for

STANDARD RAIL & STEEL CO.
Bell Telephone Bldg.,
St. Louis, Mo.

BATTERY OF 2—300 H.P. each, Atlas Water tube boiler, each with 120-4″ x 18′ tubes, 2-36″ Diam. x 84″ drums, 1-24″ diam. x 84″ drum, full flush front, Wright water columns steam gauge, safety and blowoff valves and all auxiliary fittings, oil for fuel. Mfd. by The Atlas Engine Works, Indianapolis, Ind.

Battery of 2—350 H. P. each Heine Water tube boilers, each 202-3½″x18′ tubes, 4-36″x18′ horizontal steam drums, full flush front, with water columns, steam gauges, safety and blowoff valves, and all auxiliary fittings, oil for fuel. Mfd. by Heine Safety Boiler Works, St. Louis, Mo.

350 H. P. Heine Water tube boiler, 202-3½″x18′ tubes 2-36″x18′ Horizontal steam drums, full flush front with water columns, steam gauge safety and blowoff valves, and all auxiliary fittings, oil for fuel. Mfd. by Heine Safety Boiler Works, St. Louis, Mo.

9—150 Horse Power Shell Return Tubular Boilers, Erie.

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USED LINE PIPE AND CASING
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7—25-Hp used gas engines.
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15,000 ft. 5⅛-in. used casing.
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For immediate shipment from our Texas yards.
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FOR SALE—EQUIPMENT
5 Dean Tr.plex Pumps, 5 by 8.
1 No. 2, 1 No. 5, 1 No. 6, 2 No. 7, 1 No. 10, 1 No. 11, 1 No. 12 Sweetland Oil Filters.
Two 10-inch S. Roturbo Centrifugal Pumps. Six 10-inch S. Centrifugal Pumps. Steam Turbine.
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Twelve-inch Wie and Pipe Threading and Cutting Off Machine made by Standard Engineering Company, Ellwood City, Pennsylvania. Used not over 30 days.
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HIGH GRADE RELAY PIPE
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FOR SALE—Fifteen miles of used 8 inch line pipe, with threads and couplings in excellent condition at a bargain price. For further particulars address West Ohio Pipe Company, Lima, Ohio.

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Sapulpa, Okla.

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WANTED ONE STRING of tools complete with machine, capable of drilling one thousand feet. Must be near or in an active Kentucky field. Address Box C-313, The Oil and Gas Journal, Tulsa, Okla.

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CAPITAL—An experienced, dependable broker with following will aid in financing a worth-while project. Address R. W., 810 Broad Street, Newark, N. J.

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I have one of the best propositions in the East. E. D. Watkins, Irvine, Ky.

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NATURAL GAS AND CASINGHEAD PLANT. Must have net income 1927 not less than $200,000. Will pay cash. Address
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720 South Kenosha Ave.,
Tulsa, Okla.

CAN FURNISH 9,000 acres Standard Rig and Casing, in San Juan Basin. Good geology. Need $20,000 to move rig and drill. Box 365, Farmington, N. Mex.

WANTED CAPITAL to operate gold, silver, lead property. J. E. Cooper, Cripple Creek, Colo.

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We will BUY, SELL and QUOTE OIL STOCKS—OIL ROYALTIES and OIL LEASES. If you wish to buy or sell write us.
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BROKERAGE CO.
E. T. Marion, Manager,
219 Southwestern Life Bldg.,
Dallas, Tex.

OVER LOADED with mining claims. Some look like future big mines Fine property for organizing a big Corporation. C. J. Greene, Sells, Ariz.

BUSINESS OPPORTUNITIES

CAN ARRANGE FINANCING of big oil or gas consolidation. J. Myron Murphy, 115 Broadway, New York City.

ONE HUNDRED SEVENTY FIVE thousand Dollar business property paying nine per cent, net—Wire before coming as first party with money will buy. ½ will handle. W. E. Foreman, San Angelo, Tex.

FOR SALE
An ideal plant for barreling and exporting oil. Twenty-two acres located in Westwego (across the river from New Orleans) on the tracks of the T. P. and M. P. Terminal Company with a frontage of 715 feet on the river. Contains storage tanks with capacity of 1,000,000 gallons, also several buildings suitable for Office, Laboratory, Warehouse, Pump and Boiler House, and filling machinery. Reasonable price and terms. Apply Gillican-Chipley Company, New Orleans, La.

UNUSUAL OPPORTUNITY for several specialty salesmen to represent our product in the field. W. Va. Mid-Continent field, Montana, Wyoming, and foreign fields. Write at once to Mr. S. Pass, 430 East Court St., Urbana, Ohio.

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6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

(Six words usually make a line.)
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Mail your advertisement to

THE OIL AND GAS JOURNAL

Tulsa, Oklahoma

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Machined to your drawings. Gears, Machinery designed and built.
Modern Facilities—Prompt Service.
Reasonable prices. Send for our booklet.
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Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

PUBLICATIONS

WEST TEXAS OIL DIRECTORY
Indispensable to those interested in the oil development of West Texas. Gives names, addresses and phone numbers of Department Heads of Oil Companies, Independent Operators, Drilling Contractors, Supply Companies, Royalty Buyers, Banks, Abstractors, Lumber Companies and forty other classificatons. CORRECTED each sixty days during 1928 without additional cost. Price $7.50. Allen Building, San Angelo, Tex.

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Before disclosing your invention to anyone, send for bank form.
Evidence of Conception.
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

ABSTRACTORS

WARN ABSTRACT AND TITLE CO.
Abstracts of titles to lands in Reeves, Loving and Ward Counties, Pecos, Texas.

HELP WANTED

EXECUTIVE-ASSISTANT: 25 to 35. The position is that of assistant executive in control of the production of one of the large eastern oil companies. Requires thorough knowledge of oil producing, together with at least some theoretical knowledge of production accounting. Practical accounting ability desirable but not essential. This is a real opportunity for the right man. Type applications, if convenient, giving detailed information on education, experience, (list employers and give reasons for leaving). Some estimate of salary desired. Applications will be considered confidential. Box C-316, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Technical graduate with 2 to 5 years experience in connection with refinery or gasoline plant operation. This opening is for shift work in operating an experimental process. Apply J. W. Pugh, P. O. Bin L, Breckenridge, Texas.

OIL SALESMEN
To represent an old reliable manufacturer, producing a line of products you can handle as a probable side line. Every buyer of oil is a prospect for our products. Liberal commissions and protected territory. Box C-310, The Oil and Gas Journal, Tulsa, Okla.

WANTED — Draftsmen on refinery equipment, experienced in structural steel, plate work, concrete and pipe layout. Location, Chicago. Box C-295, The Oil and Gas Journal, Tulsa, Okla.

GREASE CHEMIST wanted in research department of large eastern oil refinery near New York. Interesting work in development of new products and improvement of processes. Write, stating age, schooling, experience, salary, nationality and religion. Box C-299, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

LAWYER—Wants permanent employment with oil company or corporation. Reasonable salary. R. W. Harville, 1619 South Norfolk Ave., Tulsa, Okla.

SUPERINTENDENT—Familiar with all types of modern equipment and methods of operation and construction. Asphaltic and Paraffine Base crude. Can install up-to-date business-like management of all operations. Best of References. Box C-315, The Oil and Gas Journal, Tulsa, Okla.

CHEMIST and Chemical Engineer now employed desires change. University graduate. Three years oil refinery experience, plant and laboratory. Age 27. Single. Excellent health. Best references. No objection to leaving this country. Box C-312, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM ENGINEER—Graduate geologist, 4 years experience, have given satisfaction in charge of subsurface work, petroleum engineering, geological and production departments major company, open for engagement after March 15 and can give best references. Age 26, married. Box C-294, The Oil and Gas Jornal, Tulsa, Okla.

TWENTY YEARS experience in cable and rotary tools, air and gas lift and pumping production. Ten years as superintendent in Mid-Continent fields. Married man. Now employed by big oil Co. Want to make a change. What have you to offer? Box C-311, The Oil and Gas Journal, Tulsa, Okla.

WANTED — Position as oil stillman, prefer Mexico or South America; can give best of reference. Write F. A. G., care The Oil and Gas Journal, Tulsa, Okla.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

POSITIONS WANTED

EXECUTIVE

Broad field and plant management experience with large corporations in the manufacture and distribution of oil field machinery, drilling tools and equipment with a proven background of modern shop, technical and sales promotion experience. A tactful clean cut successful married man of 45 in the prime of health and experience is available for employment April 1. Interview solicited from those who have an opening for an executive, or assistance in any responsible phase of industrial development, management of sales. Box C-314, The Oil and Gas Journal, Tulsa, Okla.

WANTED—April 1, 1928. Position as Production Supt., 17 years experience in production, cable tools and rotary; 12 years with large company. Best of references. Address Box C-300, The Oil and Gas Journal, Tulsa, Okla.

LEASES—PRODUCTION

GAS AND OIL leases for sale in the new central Michigan oil fields. Inquire of W. W. Russell, Mt. Pleasant, Mich.

SOUTHWEST TEXAS — WINKLER, Loving, Reeves, Ward, Pecos, Culbertson Counties.
Drilling blocks, Leases, Royalties.
Ranches in fee.
H. F. Anthony, Pecos, Tex.

NEW MEXICO—Leases in Lea and Roosevelt; cheap royalties in Roosevelt and Guadalupe; leases in any county; information regarding New Mexico developments. William U. Ttate, Franciscan Hotel, Albuquerque, N. Mex.

STATE OIL AND GAS leases in twelve New Mexico counties. Real opportunity. Wm. C. Uphoff, Decatur, Ill.

FOR SALE—Oil leases near drilling wells in Hancock, Ohio, Daviess, and McLain Counties, Ky. Prices reasonable. J. C. Preston, 400 E. 3rd., Owensboro, Ky.

OIL LEASES and royalties. Ector, Crane, Pecos, Reeves, Ward, Upton and Winkler Counties; buy or sell. C. H. C. Anderson, 712 Linz Bldg., Dallas, Tex.

FOR SALE — Leases, Oil Production, Asphalt, Limestone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

"IN THE TREND"
Southeastern New Mexico and West Texas counties — Lea, Eddy, Chaves, Gaines, Andrews, Winkler, Loving, Ward, Culberson and Pecos Counties, oil and gas leases, royalties and drilling blocks. We buy and sell. F. S. Blackmar, P. O. Box 541, Roswell, N. Mex.

WINKLER—PECOS COUNTIES
Leases and Royalties
W. S. PATTERSON
Pecos, Texas.

LAND, leases, royalties, for sale Okla., Texas. Waltman, Barnsdall, Okla.

FOR LEASE—320 acres West Texas, Martin County. Joins big production Counties. 188 acres Hamilton County, Kansas, in line present big lease drive by big companies. J. D. Clond, 1030 E. Ocean, Long Beach, Calif. Owner in fee.

OIL LEASE BROKERS — Get my wholesale prices before buying. One hundred and fifty thousand acres to select from. OIL SCOUT, P. O. Box 200, San Antonio, Tex.

FOR SALE close to drilling wells; Leases, Royalties and Drilling Blocks in Webster, Calhoun and Chickasaw Counties. Best of Geological reports on this acreage. Box 4, Woodland, Miss.

HAVE CHEAP TEN YEAR leases for sale Washita-Custer Counties, some ½ royalties and some good blocks of leases. J. J. Sallaska, Corn, Okla.

LIBERTY COUNTY, TEXAS — For lease—190 acres in the Jacob E. Self League, South of Liberty and two miles North of the Moss Bluff Salt Dome. Owner, Box 27, South Orange, N. J.

LEASES—PRODUCTION

OIL AND GAS LEASE
SW ¼ and SW½ of SE¼ containing 240 acres in Sec. 64, McMullen Co., Texas, and 480 acres School land N½ and SE¼ of Sec. 340, Block 1-A, Coke Co., Texas. Cash bonus is required which may be deducted from production. Investigate, then make your offer. Jos. Manz, Olmitz, Kans

THIS IS a real oil field with three real sands all producing, twenty to sixty feet thick. Leases for sale and drilling contracts. I. S. Callender, Owensboro, Ky.

UNUSUAL OPPORTUNITY—Have block 10,000 acres, Eastern Kansas, 30 miles Kansas City. Geology and well logs show large enclosed sub-structure. Three encircling deep well (not on structure) penetrated two oil saturated horizons of more than 100 ft. in thickness each, at depths of 1,900 and 2,300 ft. This district encircled by more than 500 shallow oil and gas producers. Considered large gas proposition at depth of approximately 2,500 ft.; both oil and gas pipe lines cross the block. Will assign half the acreage for test well. Dr. E. E. Paddock, Kansas City, Mo.

6,500 ACRE solid block Colorado County, Texas, on structure described in The Oil and Gas Journal, March 15, page 46. Drilling on three sides. 2,500 acres for test. Owner, 1642 Rice Hotel, Houston, Texas.

FOR SALE or will make a drilling contract on a block of 1,000 acres of oil and gas leases in the Shale Gas Territory, Wilson County, Kans., good market for gas, low pressure line, company will come to the wells for the gas. Address Box C-253, The Oil and Gas Journal, Tulsa, Okla.

FOLKS
If the big oil companies pay a big price for thousands of acres, the price of six or seven wells, not counting operating costs, in the Southeastern part of Natchitoches Parish, La., wouldn't a close in lease be a good bet? A few left. For lease and royalty prices, write Box 100, Gorum, La.

CULBERSON COUNTY, TEXAS
Quarter, half, or full sections, ten year term, 10 cents rental, close in to Hickey et al drilling test section 20, block 82; favorable geology; price $2 per acre. H. W. Stevenson, Empire Bldg., Pittsburgh, Penna.

LEASES—PRODUCTION

GRADY—CADDO—CUSTER COUNTIES, OKLAHOMA
For sale, oil leases located on structure. Geological maps showing location of leases and adjoining lease owners furnished to reliable persons only. Robert Wilson, Kennedy Bldg., Tulsa, Okla.

FOR SALE—Blocks of oil and gas leases in Ohio and Pennsylvania close to production, where the cost of drilling is cheap, ranging from 1,500 to 3,000 feet in depth. Room 1, Masonic Bldg., Muncy, Penna.

DEFINING Oil and Gas structure that will produce and locating—ten per cent. Box 302, Tonkawa, Okla.

FOR SALE by owner, 360 acre oil and gas lease in Neosho County, Kansas. Four producing wells on property, recently drilled, fully equipped. Will sell reasonable. W. H. Bird, Matthewson Hotel, Parsons, Kansas.

INCORPORATIONS

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

RANCHES AND FARM LANDS

PECAN, orange, fig groves, on Gulf; monthly payments; quick returns. Suburban Orchards, Dept. J., Biloxi, Miss.

MONEY RAISING

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 136 E. 13th, Oklahoma City, Okla.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

OIL INDUSTRY PRINTING

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We are prepared to furnish from stock standard forms of gas meter Consumers Ledgers. Sample forms and quotations on request. First-class material and workmanship.
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NEW CATALOGUE OUT NOW
OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township books, well records, etc. Request on your letter head gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

ROYALTIES—PRODUCTION

ROYALTIES, a limited amount of participating royalty interest is offered under a three well drilling program on close in lease in WINKLER COUNTY field. Particulars 461 First National Bank Bldg., El Paso, Texas.

FOR SALE—Royalties in Lost Springs oil field, Marion, Co., Kansas. H. R. Hurd, Chase, Kansas.

WATCH NORTHEAST NEW MEXICO
Recommended by leading geologists. Buy ahead of production. Can NOW buy royalty at low prices.
UNION ROYALTY CO.
Petroleum Bldg., Oklahoma City, Okla.

OWNERS OF ROYALTY in West Texas Counties wishing to sell, submit to Box C-270, The Oil and Gas Journal, Tulsa, Okla.

TEST WANTED on block of 4,000 acres almost solid, favorable geology. In Grady County. Write E. E. McDowell, Verden, Okla.

FOR QUICK SALE 16 producing wells in a 1,000 acre lease in Montgomery County, Kansas. Entire lease proven, having drilled in five locations, therefore, have six small power plants and seven iron delivery tanks; all equipped and the lease a business doing, producing concern. 35 to 36 gravity oil. This lease is 7 miles North of Cherryvale, Kansas, locally referred to as the Shanton lease. Will sell for $50,000 CASH. For further information communicate with Harry B. Luntz, Chanute, Kansas, who is the local representative, or address A. V. Jackson Trustee Company (sole owners) room 1701 Union Central Bldg., Cincinnati, Ohio.

$10 OR MORE you may own perpetual deeded royalty Pecos, Winkler and other active West Texas counties. Drilling bulletin, title assurance and resale service features of "NATIONAL ROYALTIES." Send your address. National P. & R. Company, Box 1214-B, Wichita Falls, Tex.

WANTED — West Texas production. All details in first letter. Write Box C-296, The Oil and Gas Journal, Tulsa, Okla.

MONTANA producing royalties, bargains, odd lots Raymond, Box 1776, Great Falls, Mont.

BUYERS AND SELLERS of Mid-Continent oil Royalties. Inquiries invited. Joe P. Crawford & Co., Petroleum Bldg., Oklahoma City, Okla.

WEST TEXAS ROYALTIES
FOR SALE
Of prime consideration is the geological work accompanying each sale.
J. F. MARION OIL COMPANY
1213 Magnolia Bldg., Dallas, Texas.

FOR SALE—Royalties in Los Springs oil field. Marion County, Kansas. H. R. Hurd, Chase, Kansas.

ROYALTIES WANTED. Will pay cash for producing royalties, any size, priced right. Write legal description, number, age, depth, production of wells, full details and price. P. O. Box 1359, Tulsa, Okla.

WATCH NORTHEAST NEW MEXICO
Recommended by leading geologists. Buy ahead of production. Can NOW buy royalty at low prices.
UNION ROYALTY CO.
Petroleum Bldg., Oklahoma City, Okla.

WANTED 5—20 Barrel shallow production, must be cheap. Write 40 East 14th St., Tulsa, Okla.

ROYALTY
Perpetual Royalty Deed 120 Acres, Beaver Co., Oklahoma. $1.00 per acre. Box 25, Wilkinsburg, Penna.

FOR SALE—One fourth royalty under Secs. 90, 104, 108, 110 and 112 of Block D, Upton County, Texas. Royalty conveyed coexistence with outstanding leases. Price $12.50 per acre. Address Owner, Box 111, Clovis, N. Mex.

MINERAL RIGHTS—One-fourth mineral rights 1,504 acres one dollar per acre midway between Milham and Texas Co. wells, Southwestern Hardeman County, Texas. Both tests to be drilled 4,500 feet. J. L. Elbert, Jr., Quanah, Texas.

Tell the Complete Story

No. 1

FOR SALE — Three Diesel generator units. Good as new. Can be bought at bargain.

No. 2

FOR SALE—Three 625-kva. Allis-Chalmers Generators; 3 phase; 60 cycle; 2,300 volts; 180 r.p.m. Direct connected to 750 h.p. Busch-Sulzer Diesels; direct connected exciters. Units are modern and have seen only two months service. May be had at reasonable price.

If these two classified ads appeared one beneath the other, you would unquestionably answer No. 2. It is concise but gives an adequate description of the generator units for sale. Prospective buyers will not ordinarily write for complete details, but expect them to be given in the advertisement.

Ad No. 1 is too brief to command action. The reader is left in doubt as to the make of the generator, the number of revolutions, the voltage and other important details.
In writing your classified ads bear in mind that facts are essential. Tell the complete story.

Classified Wants Department

Upward Tendency in Chicago Market

Kerosene Is Firmly Held. Distillate Movement Light. Fuel Oil Inquired for With Evidences of Increasing Demand

By J. B. Waldo

CHICAGO, Mar. 19.—The gasoline market showed a distinctly upward tendency Monday, several of the important refiners advancing their gasoline prices, one of them naming 7 cents as its price for the U. S. Motor grade. This is out of line with the general spot market, where 6⅜ cents is the most commonly named price for the U. S. Motor grade, and several refiners were still willing to take business for immediate acceptance at 6¼ cents; but the number of refiners who are quoting 6⅜ and 6½ cents is growing steadily. It seems almost a certainty that before the end of the week there will be nothing to be bought in this grade for less than 6⅜ cents, with the possibility that the bottom of the market will be at the half. The demand on Monday showed only fair activity, but recently Monday has been one of the days of least active demand. There was no change in the movement or prices of the higher gravities, which are selling in a routine way.

Kerosene is firmly held and there has been considerable buying, but right now there are some complaints of the difficulty of securing shipping instructions on orders already booked. The distillate movement is light, although there is some filling-in business going on. Prices are fairly well maintained.

There was little doing in gas oils in the way of new business, but supplies are rather hard to buy and the margin is still very narrow. Fuel oils are inquired for and there are many evidences of an improvement in the industrial demand in the near future. The buying of oil for heating solely is gradually decreasing with the advance of the season.

The weather promises to continue clear and bright and a little warmer than last week. Dealers continue to report a larger gallonage than a year ago from most of the territory.

Gasoline Demand Better

Gasoline demand is slowly improving, partly the result of the season of the year and partly due to the stronger market which is developing slowly but it would seem surely. According to the information available at the Chicago refinery offices, stocks of gasoline at the various plants are in good shape, many of them reporting much smaller stocks than a year ago at this time. For those who have larger stocks on hand than the others it is claimed that they are obliged to carry the supplies for their own distributing stations. It may be assumed that stocks of U. S. Motor gasoline are in better shape than a year ago at the Oklahoma and Kansas refineries, according to reports made to the sales department in this city.

The demand continues well above last year as it has been for several months. Recent averages of increase have been above the average for the entire year of 1927 when compared with the corresponding month of 1926. These are favorable for a better condition in the industry than a year ago for the gasoline refiner. Not long ago a refiner in making a statement regarding his plant said almost apologetically, "You know, we run for gasoline." The refineries are few and usually of small capacity whose chief product and whose profits are not from "running for gasoline." Gasoline is and will be for a great many years to come the major petroleum product.

Gasoline Bears Burden

A good market for fuel oils, lubricants or kerosene may help a lot at times but if the gasoline is not selling at a reasonable profit above the cost there is little chance that the plant can be made to pay from its sales of the other products. For this reason if no other the steady movement towards better returns on gasoline sold, are a very favorable feature in the oil situation as a whole. Jobbers naturally seek to buy at the lowest going price in the market. They must have costs on their major product that will make it possible for them to compete with their competitors. But a higher market for gasoline will be welcome to the dealers who recognize that aside from the fact that an industry cannot prosper if the production of supplies is not done at a profit, that the great menace of cut prices is largely due to the too wide margin between costs delivered at the stations and the price to the public. Aside from the fact that many of the dealers are operating too many stations and at too great overhead costs, there is a necessity for reducing the margin to a point where prices will be maintained because they must be, not by the mere desire for a large profit.

There is a fascination in doing a large business. In all lines of industry rapid expansion has been the rule. Every chain store system has establishments that do not pay at least at the start but the actual investment in the average chain store, be it grocery, meat market or drug store, is much less than in a service station. If a store cannot be made to yield a profit, it is a comparatively inexpensive matter to move stock and fixtures to a similar store in some other location. It is different with a service station and the oil man should be very sure of his prospects for business before he starts another filling station. With a narrow margin the temptation to add to the list of stations will be less alluring. Refiners can maintain a market that will show a profit for them and still leave an ample margin for the distributor on the present tank wagon scale. They can only do this by avoiding overrunning the actual demand for their products.

Sticks to One Refiner

A large local jobber recently said that since he had concentrated his purchases with a certain source of supply that he had all worries regarding his gasoline supply removed for the first time since he started in business. He said that the product of his present refiner was always of the same uniformly high quality, that shipments were made to a dot and that the management of the refinery was always ready to co-operate with him to make his business a success. He concluded by saying that he was going to stick to that refiner just as long as it did as well by him as it had been doing even if the gasoline cost him a fraction of a cent more than he might have to pay for the product of other refiners which might or might not be of equal quality. He added, "When I know that I have a good thing I am going to stick to it." If refiners would disregard volume and operate their plants with the idea of making a profitable business for their customers they would find many of the worries regarding their own success removed.

The gasoline market in Chicago last week showed a steadily increasing firmness in price and with it a good volume of business. There was no rush to buy and very little indication of an intention of the dealers in the country to buy for storage. Occasionally some oil company has ordered a considerable quantity but only where the price was very much in its favor or some concession in terms was granted to help it carry the load. This was seldom the case but it is not unlikely that some of the dealers are taking in a little more gasoline than they are moving right now and gradually accumulating some stock in their tanks. This is largely an assumption based on the reports of sales made and on the statements of salesmen in the various parts of the territory. The established dealers seem very hopeful of a larger demand this season than during 1927 and the consumption so far this year is distinctly good and will naturally increase with the coming of spring with better roads and longer days. There is some comment on the fact that the advances in price have been in the U. S. Motor grade and that the higher tests are very little higher than they were weeks ago. Some of the dealers state they find the wants of their trade are met by handling the U. S. Motor grade and one of the special antiknock products. Others state they have found they were selling the regular grade and two higher gravities, quite commonly a 64-66 gravity, which they sold at 3 cents premium and the 68-70 gravity for which they asked a 5-cent premium. Some dealers have been surprised at the quantity of the latter that they sold. It may be that the sale of the special grades has cut into the business of the regular higher tests but the explanation does not seem wholly adequate for the fact that the extreme range in price between the U. S. Motor and the 68-70 gravity should be only 1 cent.

Price Situation

During all of last week there were several refiners who were still selling the U. S. Motor gasoline regularly at 6¼ cents. Several others were holding for 6⅜ cents and a price of 6½ cents was held for by still others. Apparently the quantity of business booked ahead was responsible for some of these variations. The marketers as a rule were asking 6⅜ cents but as was the case with refiners in some instances they would sell at 6¼ cents rather than lose business. It is claimed by those who were selling at 6¼ cents that others who were asking more were able to stand for their price by the orders on their books and it was broadly stated that the bulk of the advance business booked over March was taken at materially less than 6¼ cents. Sales were made freely last week at a range of 6¼ to 6⅜ cents with the new business booked at higher prices relatively small in quantity. The 6¼-cent price was bottom and several of the concerns that were selling at that price had advanced to it early in last week, so that even with these refiners the tendency was upwards. Dealers who were able to buy over March at 6 cents or less may do considerable shopping around when the time comes for them to make their April purchases but unless all signs fail they will have to pay substantial advances over their March costs for their April supplies. Takings on contracts are stated to be excellent, the only points where delays are requested being from the weather-bound points. The heavy snows of the first part of last week did not extend south into Illinois and southern Wisconsin but the more northerly parts of the territory were absolutely snow-bound with a fall of several feet of heavy snow. A little higher price is being asked in the differential territories to the east of this city. Prices equaling 6 cents, Group 3, or a little less were being made. Refineries on the Mississippi River were quoting around 7½ cents at the refinery for delivery at Ohio points. Others quoted 6 cents, Group 3. West Virginia and Kentucky refiners competed for the business and to some sections the New Orleans plants had a great advantage in freight costs so that any real improvement was slight.

Natural gasoline was in light demand here and the prices were slightly lower.

Kerosene Demand Good

Kerosene was in good demand all of last week and the bottom price was 4¼ cents at the refinery with many seeking to find a lower cost but unable to do so for any quantity. Dealers are preparing for the spring demand which should be here shortly as the fields are drying rapidly in the southern districts and will soon stand tractors over a considerable area. The southern part of this State is not in a very good condition financially. In the districts where bituminous coal mining is an important industry the condition is bad and the agricultural sections have had two poor crop seasons besides considerable flood damage. It is commonly said that a farmer can stand one bad crop but then when there are two successive crop failures the farmers are all broke. This condition may make the farmers in the southern part of the State turn to horses and mules rather than the tractor but generally over the territory and especially in the Northwest the number of tractors owned has been increased greatly. The price range was 4¼ to 4½ cents for the 41-43 gravity with the bulk of the business done at 4⅜ cents although reports are made of increasing sales at the higher price. There was urgency for shipments shown by many buyers.

Furnace Oils

The furnace oil business is just gradually fading away with advance of spring so far as the domestic consumer is concerned. There was some demand for distillates and the zero gas oils but the orders were for scattering cars intended to last for the remainder of the season. Some of the fuel oil distributors were buying more largely of the 28-30 material which is used in the larger installations such as hotels and public buildings, stores and apartment houses where heat is required for longer periods and later in the season than in the homes. Quoted prices were unchanged but any buyer who was willing to shop for the lowest possible price might be able to shade the regular quotations, especially on the distillates.

Gas oil remains firm with quite an active demand from smaller gas companies and industrial organizations as well as an occasional distributor. Some few buyers were able to secure a 2½-cent price for quantity business but this was the low refinery price and many orders for straightrun gas oil were booked at 2⅝ cents which was the prevailing price. The market is very narrow due partly to the feeling that with the coming of a larger gasoline demand the refineries will start their cracking plants which will increase the supply of recycled oil and if they do not the stocks of straight run oil will prove burdensome and be more freely offered. This is a matter for future development but it has its present influence. The zero gas oils are selling a little lower than they were during the midwinter but the change is not important consisting for the most part of the wiping out of the higher figure in the price bracket with the lower figure still maintained. There is little demand for straw gas oil now and the zero oils for which there is the greatest inquiry are those of the heavier group more particularly the 28-30 gravity. In a general way the demand for the zero oils is less and the premiums are not being paid or are narrower.

Fuel Oil

There has been some talk of a possible increase in the demand for fuel oils as a

result of the situation in the bituminous coal mining districts. It is not the opinion of those well informed that the desire to be prepared for a coal shortage has any part in the increase in the demand for fuel oil from some of the larger industries. It is simply because it takes time for an industry to reach its capacity production after the winter's slack time. One large plant near this city which used almost no fuel oil during December and January has recently increased its shipping instructions to a car a day which is its usual quantity when the plant is fully busied Another plant has taken in 25 cars preparatory to resuming full production, not from fear of any coal strike. These are two out of many typical cases. In spite of this larger demand, and there is a larger demand right now, prices with some refiners have declined an average of 5 cents a barrel during the past three weeks. Not all refiners have reduced their prices but it is possible for a buyer to purchase from the same sources of supply at 5 cents lower than he could three weeks ago, and these sources of supply have been sufficient to care for a very considerable part of the demand and other refiners who wanted business have met these prices. The market was working on a very close margin and the consumer is not receiving the decline except where the competition is very keen.

Another factor is that some quantity of heavy fuel oil from West Texas crude is being brought to this market and is slowly finding consumers who will try it out and some of them find that they can use it. The sulphur in some of these oils is lower than in the average Smackover fuel oil and the cold test though high in some of the oil is not entirely deterring some large consumers from contracting for supplies of this oil. Several of the large brick manufacturers have made contracts for this West Texas fuel and in some cases it is for a year or even longer. This marks a larger competition from these crudes but they are not new for considerable quantities have been sold here during the winter. A little Smackover was offered in the trade last week but it is not understood that this oil will be freely available to buyers and the price which is high as compared with refinery oils does not make it important to the refiner. Were it not for the offerings of refiners who are so located as to give them decided advantages in this district and for the efforts of the sellers of fuel from West Texas crudes, the fuel oil market would be more responsive to the larger demand but as it is the latter is offset to a great degree by more free offerings of fuel oil from the sources named.

Little Change in Lubs

The lubricating oil division has shown very little change. Some refiners state that the market for bright stocks generally is stronger while others find little if any change and state that it is just riding along. Deliveries on contracts are very good but new business is not being written in great quantities. The demand for industrial oils is better due to the increase in plant operations. There seems to be no change in price competition. One large contract for bright stocks extending over a year was written at 21½ cents last week. This was a large order and the competition was of the very keenest. It was taken by a refinery at a differential point. There have been some inquiries from exporters but the results of the efforts to land the business has not been made known if the orders have been placed.

Good Roads Aiding

The general increase in the consumption of gasoline reported by distributors and confirmed by the reports of gasoline taxes collected is somewhat due to the large mileage of good roads. In many of the States the building of roads will proceed at an even more rapid rate during the coming season. Iowa, one of the backward States in building of roads, has a large program which unfortunately must be deferred until next year as the cost is to be paid out of a bond issue for $100,000,000 which will have to be voted upon at the November election. But

(Continued on Page 138)

Gasoline Trend Upward in East

Stronger Tone in Both the Domestic and Export Markets. Bunker Oil Moving in Good Volume. Lubs Active

NEW YORK, Mar. 17.—Gasoline in the East Coast area continued its upward trend during the past week. Two developments emphasized the stronger tone in both the domestic and export market on gasolines.

The Sinclair Refining Co. effective today advanced the price on the U. S. Motor gasoline at all its East Coast terminals from 8½ to 8¾ cents. The advance was met by several of the leading distributors and it is believed that all the major companies will fall in line the first of the coming week.

The second development of special interest was the action of the Standard Oil Co. of New Jersey which advanced the export grade of U. S. Motor gasoline in cases from 23.90 cents per gallon to 24.65 cents. This three-quarters-cent advance follows the New Jersey Standard's advance of one-quarter cent on the same grade the previous week.

Both advances are explained as due to the better demand in both the domestic and export markets with the feeling that the next month will see a further improvement. The Sinclair company has led in the advances made on the domestic grades of gasoline since the first of the year. The company in its latest increase not only advanced gasoline at its East Coast refinery and distributing points but also made a similar advance in the Mid-Continent, Gulf Coast and Middle West.

At least two of the East Coast refiners are asking 9 cents per gallon for U. S. Motor gasoline at their coastal terminals. The domestic demand from jobbers has been steady during the past week, although weather conditions generally have not been favorable for heavy gasoline consumption. Many of the jobbers continue to store gasoline for their spring and summer gasoline requirements. Ordinarily weather conditions are such that the April consumption of gasoline in this territory shows a marked increase over March. Distributors in many cases are now buying in anticipation of that demand.

Expect Increase

Distributors are expecting at least the normal increase in gasoline demand during the coming season. Automobile registration reflects a substantial increase in new cars and trucks. Many new cars will be sold during the next few weeks with the advent of weather suitable for motoring.

Some important road improvement programs were completed in New York and the New England states late last year and these better roads are expected to lead to greater gasoline consumption in 1928. Bus travel in cities and in the rural section has greatly increased.

Some opposition is being felt by the major companies in their plan to bring about more stabilized conditions in the retail market. These companies in many cases have reduced their margins allowed the distributors. Cases are reported where the margin has been cut from 4 to 2 cents. This applies to garages and other curb pump distributors as well as independently owned filling stations.

These wide margins developed last summer due to the surplus of gasoline at refineries. Efforts are being made by groups of these independent distributors to interest sources of supply outside the large companies.

Export Gasoline

The advance in export gasoline prices was brought about by the stead demand for cased shipments. There are several inquiries in this market which indicate that additional buying will develop. From the Gulf Coast also come reports that the export gasoline market there is more active.

The attitude of the foreign buyers is said to be similar to that of the domestic jobbers. They have been staying out of the market as much as possible in expectation of lower prices. This hand-to-mouth buying has depleted their storage in many cases. With prices now apparently at bottom these foreign buyers are willing to buy not only for their immediate requirements but also are making inquiries for shipments over the next three to six months.

Kerosene

The kerosene market generally was not so active the past week as it was earlier in the month. Prices were steady. The so-called "spring demand" is not as important in this territory as it is in some of the inland marketing areas. However, considerable gasoline is used in the rural sections as fuel for tractors. This demand will be reflected in the market starting at this time and ending in May.

The prime white grades for domestic shipment are available in this market as low as 6½ cents. Most of the refiners are asking 6¾ to 7 cents for the 41-43 prime white grade, and 7 to 7¼ cents for the 43-45 gravity. In the water white grades the price range is from 7¼ to 7¾ cents with a prevailing quotation of 7½ cents for the 41-43 gravity the principal domestic grade.

The export kerosene market is not especially active. Late spring and summer are the active buying months in the export market. The standard white grades in cases are bringing 16.9 cents per gallon with the water white grades bringing an additional 1 cent. These prices have not changed in several weeks.

Bunker Oils

With practically all refiners and several independent distributors pushing the sale of the product, bunker oil is moving to the consuming trade in good volume. Prices are steady at $1.35 at the refineries and $1.41½ in New York Harbor.

The campaign to increase the consumption is unquestionably having favorable results. Some of the larger industrial plants located near the East Coast are expected to shift from coal to fuel oil during the next few weeks. The oil companies in several cases have prepared elaborate data showing the relative cost of the fuel oil and coal. Where necessary the oil companies are willing to make contracts over the remainder of the year. A few contracts extending over periods of from 2 to 3 years are reported. The terms of these contracts are flexible but the general attitude of the oil companies is that they will be able to supply their customers their fuel oil requirements over the remainder of the year at or near the present prices.

The gas oil demand is not active. The 28 plus grade is being sold depending on quality from 4½ to 5½ cents per gallon. The Diesel oils are steady at $2 per barrel. The consumption of this product is substantially greater than it was a year ago. The supplies are adequate, however, and this has prevented any increases in prices. Furnace oils, f. o.b. refinery are unchanged at 5¾ to 6 cents per gallon.

Lubricating Oils

More activity in the demand for lubricating oils is reported from several sources. With the passing of cold weather the demand in the domestic trade is shifting to the paraffin base grades. The Pennsylvania trade has benefited from this change. The 28 pale paraffin oils are generally bringing 12 cents per gallon for domestic shipment.

In the export market there was a normal movement during the week. The 600 steam refined cylinder stocks are bringing 17 cents here and the 600 Pennsylvania flash 23 cents.

Wax and Petrolatum

Most of the activity in the wax market during the past few days has been in export channels. European buyers are making additional purchases and inquiries from South America and other countries are being received. The price range for the fully refined grades is from 4 cents for the 120-122 a.m.p. grade to 5½ cents for the 135-137 a.m.p. grade. Petrolatum is unchanged.

Imports of Petroleum

Imports of crude and refined oils at the principal United States ports for the week ended March 10 totaled 1,819,000 bbls., a daily average of 259,857 bbls., compared with 1,060,000 bbls., a daily average of 151,429 bbls. for the week ended March 3, and a daily average of 220,036 bbls. for the four weeks ended March 10.

At Atlantic Coast Ports—	Week End. March 10
Baltimore	234,000
Boston	.....
New York	1,042,000
Philadelphia	364,000
Others	68,000
Total	1,708,000
Daily average	244,000
At Gulf Coast Ports—	
Galveston district	.....
New Orleans and Baton Rouge	111,000
Port Arthur and Sabine district	.....
Tampa	.....
Total	111,000
Daily average	15,857
At all United States Ports—	
Total	1,819,000
Daily average	259,857
Daily average four weeks ended	220,036

Receipts of California Oil at Atlantic and Gulf Coast Ports

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended March 10 totaled 445,000 bbls., a daily average of 63,571 bbls., against 471,000 bbls., a daily average of 67,286 bbls. for the week ended March 3 and a daily average of 59,964 bbls. for the four weeks ended March 10.

At Atlantic Coast Ports—	Week End. March 10
Baltimore	90,000
Boston	.....
New York	258,000
Philadelphia	.....
Others	97,000
Total	445,000
Daily average	63,571
At Gulf Coast Ports	.....
Daily average	.....
Total Atlantic and Gulf Coast Ports	445,000
Daily average	63,571
Daily average four weeks ended	59,964

Distribution of total California receipts is as follows:

Crude	86,000
Gasoline	263,000
Kerosene	96,000
Gas oil	.....
Fuel oil	.....
Lubricants	.....
Total	445,000

ENGLISH PRIZE FOR UNOBTRUSIVE STATIONS

A prize of £25 ($125) for a design of a petrol-filling station at the intersection of two roads is among the awards offered at the British Royal Society of Arts fifth annual competition of industrial designs in June next. The desire of the committee is "to encourage the erection of stations which, with the exception of one prominent sign, shall be as unobtrusive as possible, and merge into the surroundings of the village street or landscape. Any scheme which embraces a complete station, comprising a small shop or garage with a few living rooms overhead would be welcome. Accentuation of the lines of the present petrol pumps by discordant colors is discouraged, and it is suggested that casings or screens should be employed to mask them. A distinctive decorative sign, capable of illumination at nighttime and of adoption for general use throughout the country, is recommended. Lack of arrangement of colored tin advertisements of oil and spirit is referred to as the most prominent eyesore of the present system, and competitors are asked, therefore, to consider an intelligent grouping and methods of displaying a few posters."

Combustion Engineer in Oil Refining

With Competent Staff He Can Greatly Aid in Eliminating Waste at Plants. Explain Operating Plan

By Joseph W. Hays*
Mid-Continent Petroleum Co.

More years ago than I care to admit I conferred the title of "combustion engineer" upon myself since nobody else would confer it. I thought at the time, and for some years thereafter, that my field was limited to the precincts where the fuel was being burned, but I found that I could stand in the door of the furnace room and hear distressed heat units calling for help all over the plant. Some of them were overworked, others were compelled to do useless work, and still others, anxious to render a proper account of themselves, were not permitted to do any sort of work at all and were utterly wasted.

The combustion engineer has something to do at that interesting occasion when the heat unit is being born in the furnace, but his responsibility does not end there. He must follow the little fellow throughout the entire period of its hectic existence in the plant and see that it gets a fair chance and a square deal everywhere.

I fear that the general impression of the combustion engineer's duties is much as mine was in the beginning; that his job is limited to the implements and processes incident to the specific operation of converting fuel into active heat energy and of applying it to the boiler, the still, or what not, with the least possible waste. But is it not true that a heat unit saved in a remote corner of the plant means just as much to the fuel account as another saved at the furnace? And if anybody else is looking after the heat units out on the range why should the combustion engineer spend all of his time hanging around the corral? If combustion engineer is not a broad enough title to cover the man in charge of a general heat unit rescue campaign call him anything else you please. The job is all that counts. The name means nothing. A skunk by any other name would smell as bad.

"Heat Rescue" Work

The greatest field I have ever found for general "heat rescue" work is the oil refinery. In refining we first put heat into the oil and then take it away from the vapor. The greatest heat losses occur during the cooling operation, but there are losses, many of them preventable, either wholly or partly, at every step of the several processes in oil refining.

Why do these wastes flourish? Because the oil business, most of the time since the advent of the motor, has been busy devising ways and means to satisfy the ever-increasing demand. There have been times when any refinery, with even the crudest sort of equipment and making no effort for efficiency, could make money if it could get the crude oil to refine. The days of flush profits are gone. They are unhealthy days for any industry. Future profits will depend on the ability of the refiner to curtail his wastes.

But why should a specialist of any kind be assigned the job of caring for the heat units? Is there any particular mystery in the "trade" of the combustion engineer? The trouble is that the process men and the mechanical men who serve them are so deep in the woods of operating details that they cannot see the forest because of the trees that surround them. Their noses are so close to the printed page that they are unable to see what everybody else can read. One can get so accustomed to an obvious waste that he will cease to see it.

If you would stop wastes in a refinery you must make it the business of some competent person to hunt them out, measure them, and devise practicable means of putting an end to them—otherwise the wastes will wait and flourish until somebody thinks he has time to concern himself with them. Here is a job for the combustion engineer. He will need a staff to assist him. He will not have to go out of the refinery for his staff, and should not do so. He can make use of men already on the payrolls and, without changing their duties materially, organize and co-ordinate their efforts in a comprehensive campaign to stop preventable waste. This staff should include all of the instrument men, test engineers, and others whose business it is to collect exact data relating to operating costs and wastes. The men must be educated as well as organized. These things take time. Furthermore the men who are to assist in this war on waste must be acquainted with all of the principal operations and with the operators, especially the heads of departments. It will not be necessary, as a rule, to replace any of these men on assigning them to the combustion engineer's department. The size of the staff required will depend on the size of the job—the size of the refinery.

Any good combustion engineer can produce some results in a refinery, but if he lays the proper groundwork for a thorough campaign to take in the entire plant, if he is then given the necessary organization to carry on that campaign, and if he has the full confidence and co-operation of all the heads of departments, including the accounting department, he can produce results which should be strikingly apparent on the balance sheets of the company.

It would not be advisable here to be very specific as to the details of the organization and of the campaign itself. Each refinery is a problem in itself and must be studied carefully before the plans are made. The plans must be suited to the case, otherwise they will fail. The combustion engineer and his staff must be able, not only to obtain exact information, digest it, and arrive at sound conclusions, but also to present reports and recommendations in complete, concise, and convincing form. It will all amount to nothing unless somebody authorizes action.

Need for Action

It is not always easy to get action after it has been authorized. Nothing must interfere with the operation of the refinery. Improvements and changes must be made when the stills or other equipment can be spared long enough to permit installation. It is idle to think about making them at any other time. For this reason, and for many others, the combustion engineer must keep in touch with operation and have his plans matured in advance if he expects to make any changes in the regular equipment.

It is one thing to get efficiency and quite another thing to maintain it. Efficiency when somebody is present, watching every move that is made, is not so difficult to obtain. But to be sure of efficiency when the operators are alone with their stills and their consciences is quite another matter. Several things are necessary if the plant is to be operated continuously on the best basis of economy. There must be instruments to measure the consumption of fuel and of all of the utilities, in whole, and as distributed. All operations must be standardized as far as possible. Refinery operations are standardized in the sense that the steps necessary to be taken to produce given products from given stocks are well known and practiced. In many cases they are not standardized with reference to the best methods of producing the maximum of output at the minimum of cost.

It is easy to standardize operations in a steam boiler plant. The boilers and furnaces must be in good physical condition. The water must be treated and tested. Certain drafts must be employed. The fuel must be burned with a certain excess of air. The boilers must be worked at a certain capacity, etc. Instruments are available to check up every step of the steam-producing operation. It is therefore possible to tell the boiler house operatives today how much they wasted yesterday and which of them were responsible for the waste. Maintaining efficiency thus becomes a matter of constant watchfulness. The moment you cease to watch the daily reports the operatives themselves cease to be watchful. You will bear in mind that I am here speaking of steam boiler plants only, and that it is generally admitted the average run of such plants waste at least one-quarter of the fuel burned.

Complexity of Problem

But when we are undertaking a betterment campaign in an oil refinery we find ourselves facing a maze of difficulties the moment we leave the boiler houses. If we try to tell a still foreman how much heat his crew wasted yesterday we may have some difficulty in convincing either him or ourselves that our figures are correct. We must be sure of our proofs before we make charges against anybody.

There is no overlapping of processes in the boiler room. There is just one process, that of turning water into steam at a certain pressure. But the processes of refining oil overlap and blend themselves one into another. Furthermore, particularly in batch still operations, there are pronounced peaks in the cycles. If you make a curve representing a batch still cycle today, you may have to make another tomorrow, because you may find that a different stock is being run to a different gravity of bottoms. In most refineries the stills are exposed to the weather, which is subject to changes. Winds, generally speaking, affect the efficiency of still operation more than rain and rain more than falling temperature. All of these things must be evaluated as far as possible before we can set up standards by which to measure the efficiency of a process operation. And until we can measure the efficiency of an operator in terms of dollars and cents wasted, and prove it, we need not expect the man to go against human nature and exert himself to as full an extent as he otherwise might.

It is customary in refineries to base unit costs of operation very largely on input, or throughput, or barrels run. Figures so derived may be very misleading. Such costs for efficiency accounting purposes should be based on work performed. Suppose we are operating a sawmill. We put a log through the mill, make, say, four cuts and get a 12 by 12-inch dimension timber. The log is the "input" and the work is represented by its size and the number of the cuts. But suppose we cut the log into 2 by 4-inch pieces. The timber then works up into 18 pieces. The log is still the "input" but we have multiplied the work done on it. Until we know the practicable minimums of time, power, labor, repairs, wastes, etc., accompanying each of the two operations on the log we can set up no standards of efficiency by which to measure them. Compared to a refinery a sawmill is a very simple problem.

I have spent much time in the study of refinery accounting systems. The accountants do the best they can to get the exact costs—to reflect the dollars and cents story upon the balance sheets with as much accuracy as possible. These reports are made primarily for the information of the general office. The accountants are through when the reports have been transmitted. They have no further responsibility. The combustion engineer and his department are just getting started when they arrive at the costs of the various operations. It is their job to reduce the cost—to run them down to the irreducible minimums and hold them there. Cost figures enable this department to make compari-

The Job of the Combustion Engineer

The department will check all processes to detect wastes, have charge of all tests, except those properly coming within the province of the laboratories, and do such research work as may be permitted in the development of improvements in heat processes. The combustion engineer and his department should not be under the jurisdiction of any refinery head. This is on the sound theory that the men who are doing the checking should not be under the control of the men who are being checked. The department should be under the control of the highest official responsible for the refinery and should take orders from no one else.

Whatever the department gathers in the way of information likely to prove useful to the mechanical or process departments and, above all, to the superintendent of the refinery, must be open and available to them at all times. The combustion engineer must work out some general and comprehensive plan of campaign for his department. His job is:

1—To find out what should be done, where, when and how to do it. His previous experience will indicate in a general way his points to attack.

2—To get authority to have it done; which is some job, sometimes, especially if it involves the expenditure of money.

3—To get it done. Someone has said that plan is 10 per cent and execution 90 per cent.

4—To keep it done. It is one thing to get efficiency and another thing to maintain it.

*Presented at New York meeting, A.I.M.E., copyright, American Institute of Mining and Metallurgical Engineers, Inc.,

sons with past performances and with predetermined standards.

Refinery accountants, owing to the incompleteness of the data supplied to them, are forced to rely to some extent on estimates of yields and on arbitrary splits of costs between the several processes. Many things in their reports will be of assistance to the combustion engineer in his cost accounting, and vice versa. When the combustion engineer is in position to obtain the facts each day showing the efficiency of each department for the previous day, expressed in terms of some fixed standard, he will be able to influence the course of every efficiency curve of the refinery. He can, and should, get in touch daily with every department head and comment on the work of the previous day as disclosed by the records. He must remember that praise, when it is merited, should always be given.

Need for Careful Planning

An efficiency campaign is so much worthwhile in a refinery that it is a mistake to go about it in a half-hearted or half-prepared manner. In planning his campaign the combustion engineer must think of the refinery as a whole. He must be able to see the relations of the several departments and processes and that there is a degree of interdependence which he is not in the habit of finding in other kinds of industrial plants. If he can get the right point of view with respect to the very complex problems before him; if he is accorded the assistance that he requires and if he meets with cheerful co-operation by all foremen and heads of departments, he can produce results that will surprise and gratify everybody. With everything that I can think of in his favor he will still find that he has "one whale of a job" before him. As a result of my studies in the oil refining field I have listed more than 100 separate and distinct trails which the combustion engineer may find and follow in his search for lost heat units.

The refining industry is in its infancy. How crude the refinery equipment now looks which was considered up-to-date just a few years ago. How crude will some of the present up-to-date equipment look a few years from now? I know of no other industry where methods, all the way from the production of the raw material to the final marketing of the finished products, are in such a state of flux. Every refinery is a huge laboratory for research work, but how rare it is to find one with a systematic research campaign in progress.

The combustion engineer can and should play a very important part in refinery research, especially in the development of improvements in heat processes.

May one have a vision of the future and escape the charge of being visionary? Let us try looking ahead a little. Petroleum is composed of hydrocarbons—the most complex compounds known to the chemist. Salt water is the curse of the oil fields. The brines carry the chlorides of sodium, calcium, and magnesium. They also carry bromine and iodine. They therefore carry some of the basic materials of the chemical industry. To produce these chemicals from oil field brine, heat and electricity are necessary. Refineries waste huge quantities of the one and can produce huge quantities of the other at almost no cost at all. Steam is needed for process work. It could be produced at high pressure and stepped down to the pressure requirements of the service lines through turbines or engines acting as "reducing valves"—the actual cost of the current under such circumstances being reduced relatively near to the vanishing point. To produce caustic soda, of which huge quantities are used in the refining industry, salt water, heat, and electricity are required. Chlorine is produced as a by-product and chlorine is used in the industry.

Do we find the oil industry utilizing its brine? Yes. It provides a fine basis for damage suits and helps to keep the legal departments busy. Oil men swear at the salt water and haul their caustic soda, which could be produced on the refinery grounds, 1,000 miles or more, in some cases, from the big chemical plants in the North. "Ethyl" has stimulated a great demand for bromine. Efforts have been made to extract it on a commercial scale from sea water. Some of the brines of the Mid-Continent Field have almost 10 times the bromine content of sea water. Refineries burn residue gases which would have almost unbelievable values if combined with some of the chemicals which can be extracted from oil field brine. It would not be difficult to show that a barrel of oil field brine actually carries more possibilities of value than a barrel of crude oil.

The oil industry, like the meat industry, will find that its largest profits are in its by-products derived from its wastes. The refinery of the future will have a chemical plant as an adjunct. The tail may wag the dog, I do not know. I do know that the combustion engineer will have his part to play in these things as they are brought about. Much research and development work must be done before I can point you to a realization of this vision.

ROCKY MOUNTAIN AREA

(Continued from Page 56)

of water. Drilling has been suspended at 5,592 feet with the 4-inch bit in the hole and some shale cavings on top of it. It is doubtful if it will go any farther though the company is making efforts to complete it. The Continental Oil Co. and the Argo Oil Co. assisted in the final stages.

The Platte Valley Petroleum Co.'s No. 1 Patterson, Section 24-6n-61, on the Greasewood Dome, in Weld County, is bottomed at 3,760 feet with the hole full of water. The 6¼-inch is being carried at 3,750 feet with underreaming in progress to lower to bottom. This test cut a sand at 2,185-2,485 feet which had a good show of gas. This gas is going down between the 8¼ and 6¼-inch casing and bubbling up through the water. It is estimated at about 1,000,000 feet.

Escondido Dome

The Kinney-Coastal Oil Co.'s No. 1 Pinos, Section 24-26s-68, on the Escondido Dome in Huerfano County, on the rim of the Trinidad coal basin, a joint test with the Texas Production Co., encountered the granite, or possibly granite wash, at 2,000 feet and has drilled to 2,025 feet without any change. It passed through about 200 feet of sandy shale and red rock before hitting the granite, which looked like it might be of Pennsylvanian age, though no analysis has yet been made. The black shales of the Pennsylvanian were not, however, encountered. The test was an important one on account of the information yielded in spite of the failure to encounter any production.

A short distance to the west of Pueblo tests drilled several years ago showed that in that area the red beds rested on the granite and that the Pennsylvanian was not in place, and it appears that this condition continues for some distance to the south and probably swings around into northern New Mexico south of Branson, in Las Animas County. The Branson well, No. 1 Adams, Section 32-34-56, found the Pennsylvanian in place before hitting the granite at 3,863 feet. The Escondido test did, however, show that the sands of the Cretaceous were all in place with considerable thickness and in good beds of shale. While some water was encountered, it was not in large volume and indicates there is no water table in that area, the theory being that the dykes and faulting farther to the east in Otero County have cut off the heavy flow of water usually found in the sands of that formation. This, it is believed, points to the Cretaceous sands in the Trinidad coal basin being worthy of more consideration than has been given them in the past.

The Come Back Oil Co.'s No. 1 Barnhart, SE NW SE, Section 35-18-70, in Fremont County, was completed at 1,780 feet and made 125 bbls. first 24 hours and 115 bbls. the second period. The well was drilled to 1,600 feet by other parties and taken over by the present company after former operator had considered it a failure. The hole was cased with 50 feet of 10-inch and 1,620 feet of 5⅜-inch, this being the only string run except the drive pipe.

Tow Creek

The Texas Production Co. has made a location for a deep test in the Tow Creek Field in Routt County in its No. 4 Belle Dennis, SE NE SE, Section 7-6n-86. There are nine producers in this pool making around 400 bbls. a day from shale, the sand tests proving the Dakota to be water bearing. Recently the company had a recheck made on the geology with a view to putting down a test to the Sundance which lies below the Dakota and which is productive on the Moffat and Iles Domes in Moffat County. A 130-foot derrick with combination rotary and cable rig will be erected and rotary tools probably will be used until the Dakota is penetrated.

Arrangements for completing the Peerless Oil Corp.'s No. 1, on the Hoel permit, NE cor., Section 23-8s-104, on the High Line structure in Mesa County, are reported. This well was drilled by B. C. Morrison to the Frontier, topped at 2,016 feet, in which there was a good show of oil. This hole originally was drilled by the Midwest Refining Co. to a shallow depth for validation purposes. There has been considerable trouble over titles and other difficulties which have hindered the operation from reaching the Dakota, but it is understood these have been ironed out and that drilling will be resumed. The location is favorable for a deep test and it is probable it will go at least to the Sundance and possibly to the Pennsylvanian. A favorable structure exists there and several of the larger companies have interests.

Iles Dome

In Northwestern Colorado, there was little now outside of routine operations. The appearance of water in the Midwest Refining Co.'s No. 4-M Shaw, NW NE, Section 27-4n-92, on the Iles Dome, is not considered as serious as it might appear. The water appeared in the Morrison sand, the test not having been drilled to the Sundance. An analysis made by one company indicated to the satisfaction of the officials that it was water from the Dakota above and resulted from a leakage around the casing shoe, and that it was not Morrison sand water.

Shaffer Oil & Refining Co.'s No. 205 Yarg, NW NW, Section 26-4-92, is drilling out cement at 3,504 feet. The Texas Production Co.'s No. 17 State, NW SE, Section 15-4-92, is running 10-inch at 3,140 feet, and its No. 6 Parkinson, NW NW, Section 23-4-92, is drilling at 2,795 feet. Same company's No. 13 Parkinson, NE SW, Section 22-4-92, is bottomed at 2,770 feet and underreaming at 2,665 feet. Alliance Oil Co.'s No. 1 Milliken, SW cor., Section 14-4-92, is drilling below 1,400 feet. The Midwest Refining Co.'s No. 8-SD-2 Parkinson, NW NW, Section 23-4-92, is drilling at 385 feet in gray shale and its No. 7-SD Parkinson, NW NW, Section 23-4-92, is drilling at 2,780 feet in gray shale. Same company's No. 33-SD Parkinson, SW SE, Section 22-4-92, is spudding at 104 feet.

In Rio Blanco County, the Midwest Refining Co.'s No. 2 Rangely, Section 30-2n-102, is making slow progress on account of the heavy gas pressure. It is working on the 4¾-inch casing at 3,473 feet, and gas coming in around the shoe. The Texas Production Co.'s No. 1 Freeman, Section 27-3n-94, Wilson Creek structure, is drilling at 5,453 feet.

Montana

In the Sunburst Field in the new Baker strike area, a deal was completed in Great Falls the past week that disposes of 80 acres cornering the Baker tract and wells for $50,000. The purchaser is Joe Baker and the seller is T. P. Jones.

The two wells, No. 1 Baker, discovery well, and No. 3 Baker, the second well brought in, are keeping up a record for freakishness. No. 1 Baker recently started on another increase in production and rose from 600 to 800 bbls. in a few hours, then settled at the latter figure until all available tankage was filled and the lead lines were closed. No. 3 started flowing oil and then made part water and oil until it is now flowing a stream of clear water. The owners believe it will shortly start making oil again and that the oil flow will increase until the water is entirely displaced. This is based on the way No. 1 Baker acted when it came in a gusher of oil instead of water. There is, however, another action noticeable in No. 1 Baker that seems to coincide with tidal flows in the ocean, the well making more or less oil at certain periods. No satisfactory explanation has been offered.

In the Pondera Field, No. 1 Fulton, about a half mile from the discovery well, is expected to reach the sand at any time. The well is logging high and looks like a strike. The sand is expected at 2,050 feet and the hole is about 1,950 feet. An oil showing making two bailers of oil an hour has been found at 1,940 feet.

ROCKY MOUNTAIN PRODUCTION
Runs From the Field, Week Ending March 17

Wyoming	
Salt Creek	39,830
Big Muddy	2,700
Grass Creek	2,550
Elk Basin	920
Greybull	10
Rock River	2,780
Lance Creek	740
LaBarge	970
Poison Spider	210
Hamilton	1,220
Oregon Basin	260
Osage	380
Lander	700
Ferris	60
Byron	30
Lost Soldier	4,650
Simpson Ridge	30
Total Wyoming	58,030
Montana	
Cat Creek	1,780
Lake Basin	170
Kevin-Sunburst	10,000
Total Montana	11,950
Colorado	
Florence	1,254
Moffat	1,528
Fort Collins	3,537
Iles Dome	1,240
Rangely	100
Tow Creek	455
Boulder	25
Total Colorado	8,139
New Mexico	
Rattlesnake	366
Hogback	520
Cap Rock	211
Table Mesa	116
Artesia	1,268
Total New Mexico	2,481
Total Rocky Mountain	80,600

HELIUM IN GERMANY

The appearance of helium gas near Frankfort, Germany, was reported some time ago as the result of deep borings for water, and it is now reported that the Geological Institute at Darmstadt and the I. F. Farbenindustrie of Frankfort have been invited to verify its occurrence. It is claimed that helium has not hitherto been found anywhere in Europe. After the discovery of the gas, the drilling company shut in the well and started the negotiations for the carrying out of further drillings. The I. G. Farbenindustrie has for years produced small quantities of helium in its laboratories, and has a larger interest in the reported discovery on that account.

MEXICAN GASOLINE PRODUCTION

MEXICO CITY, Mexico, Mar. 16. (By Trens Agency).—Production of gasoline from plants using natural gas in Mexico, in cubic meters, (cubic meter=6.3 bbls.) during the year 1927, according to figures of the Petroleum Section, Bureau of Special Taxes, Department of Finance, was as follows:

Company—	Gasoline— Crude	Refined	Total
El Auglia Pet. Co., (Naranjos plant)	1,412	...	1,412
Huasteca Pet. Co., (Cerro Azul plant)	7,438	364	7,802
(Tierra Blanca plant)	3,404	163	3,567
Mexican Gulf Oil Co.	109	...	109
Penn Mex Fuel Co., (Alamos)	571	...	571
Total	12,934	527	13,461

MOVE MACHINE SHOP

Part of the Ohio Oil Co.'s Big Muddy Machine Shop at Parkerton, Wyo., is being transferred to the Yates Pool, Pecos County, Texas. Frank Redick, who has been in charge of the company's shops in the Rocky Mountain territory for the past 10 years, is being transferred there to erect and have charge of the new shop.

Brief Items for Petroleum Refiners

NATIONAL PETROLEUM ASSOCIATION AT CAMBRIDGE SPRINGS, APRIL 19-20

Members of the National Petroleum Association will listen to approximately 30 talks in the two-day semiannual meeting of the association to be held April 19 and 20 at Cambridge Springs, Pa. The addresses will be divided under the following general subjects: Standards and Tests, Welfare and Insurance, Refining, Membership and Relation, Trade and Commerce, and Traffic and Transportation.

At the Fellowship Supper a film, "The Story of Petroleum," will be shown. Another film known as "Atlantic City Scandals," sponsored by F. G. Clark, will also be shown.

Following is the program for the two-day meeting:

Semiannual Meeting National Petroleum Association, Riverside Hotel, Cambridge Springs, Pa., April 19-20

Thursday Morning, April 19, 1928
10 A. M.

1. Keynote Address—E. M. Lyons, president National Petroleum Association.
2. General subject, "Standards and Tests." A. W. Scott presiding.
   (a) "How to Secure Greater Uniformity in Testing"—Dr. Charles V. Bacon.
   (b) "Cloud - Fluidity - Pour and Cold Test" — E. M. Keeley, Crew Levick Co.
   (c) "Volatility and Distillation of Motor Oils"—E. E. Bown, Emery Manufacturing Co.
   (d) "Fundamental Research in Petroleum" — Dr. R. P. Anderson, American Petroleum Institute.
   (e) "Activities of the Department"—A. W. Scott, Trustee in Charge, Department of Standards and Tests.
3. General subject, "Welware and Insurance." R. A. Wotowitch presiding.
   (a) "What We Can Do"—James H. Herbert, president Fire and Safety Marshals of the National Petroleum Association.
   (b) "The Warren Group"—James F. Sweeney, Viking Oil Corp.
   (c) "The Bradford Group"—A. Mulhaupt, Kendall Refining Co.
   (d) "The West Virginia Group"—W. D. Manz, Tri-State Refining Co.
   (e) "The Oil City Group"—Wayne K. Glenn, Pennsylvania Refining Co.
   (f) "Fire Prevention" — Frank G. Benedict, Sinclair Refining Co.
   (g) "Fire Aid Training" (with demonstration)—J. J. Forbes, supervising engineer United States Bureau of Mines.

Trustees Meet at Lunch
Thursday Afternoon, April 19, 1928
2 P. M.

4. General subject, "Refining." P. S. Tarbox presiding.
   (a) "Economy in Efficient Combustion"—H. A. Ross, combustion engineer, National Petroleum Association, Co-operative Engineering Service.
   (b) "The Advantages and Opportunity of the Small Refinery"—H. S. Bell.
   (c) "What Pennsylvania State College Can Do for the Pennsylvania Oil Industry" — Doctor Reiss, Pennsylvania State College.
   (d) "Filter House Problems" — H. R. Lewis, Conewango Refining Co.
   (e) "Treating Light Distillates"—By a representative of the Bureau of Mines.
   (f) Reports from groups: Bradford, Warren, Oil City, Pittsburgh—Arranged for by P. S. Tarbox.

Thursday Evening, April 19, 1928

Fellowship Supper

Film, "The Story of Petroleum"—United States Bureau of Mines.

"Atlantic City Scandals"—F. G. Clark's Atlantic City films.

Friday Morning, April 20, 1928
9:30 A. M.

5. General subject, "Membership and Relations."
   (a) "Membership"—O. P. Keeney.
   (b) "The Oil Industry and the Public" — Trell Yocum, American Petroleum Institute.
6. General subject, "Trade and Commerce." H. A. Logan presiding.
   (a) "Knowing the Facts" — H. W. Schmidt, United Refining Co.
   (b) "What Do the Figures Show?"—By a petroleum economist.
   (c) "Is the Refining Branch of the Industry Helpless in the Present Situation?" — G. C. Davison, Tri-State Refining Co.
   (d) Program for the Functioning of Marketing Groups—H. A. Logan, United Refining Co.
7. "Refinery Accounting"—T. J. Hilliard, Waverly Oil Works Co.
8. Treasurer's Report. G. B. Hunter, treasurer National Petroleum Association.
9. "What the Association Stands for and What It Is Doing"—Fayette B. Dow.

Lunch
Friday Afternoon, April 20, 1928
2 P. M.

10. General subject, "Traffic and Transportation." Joint traffic meeting. Willis Crane presiding.

GROSS SUCCEEDS RICE

Myers Gross, formerly of the Refiners Consolidated Sales Co., is now sales manager of the Vickers Petroleum Co., Wichita, Kans. Mr. Gross succeeded Clarence W. Rice, who held the position for several years. Both Messrs. Gross and Rice are widely known in Mid-Continent refining and Middle West jobbing circles.

BUYS AMICABLE COMPANY

CHICAGO, Mar. 19.—The Atlas Petroleum Co. announces that it has purchased the general marketing business which has been conducted at Dallas, Tex., for the past six years by the Amicable Petroleum Co. The two offices of the companies at Dallas will be merged and continued under the management of Jesse S. Johnson, formerly head of the Amicable company.

NEW UNITS AT BATON ROUGE

BATON ROUGE, La., Mar. 17.—Installation of 10 new Tank and Tube units and two Cross cracking units are under way at the refinery of the Standard Oil Co. of Louisiana here. In addition a number of other improvements are under way which will increase the capacity of the plant materially. The Tube and Tank process is controlled by the Standard Oil Co. of New Jersey. The Cross units are of the latest tube and tank type.

TO LAY 200-MILE LINE TO PASOTEX REFINERY

EL PASO, Tex., Mar. 17.—Plans for laying the 200-mile pipe line which will connect the new refinery of the Pasotex Petroleum Co. to the West Texas fields have been completed and the laying the line will start immediately. Work on the 10,000-bbl. capacity refinery is also being rushed.

The line will run south of the Hueco Mountains, north of Tepee Butte, and thence slightly northeast in almost a straight line to Cactus Flats, south of Guadalupe Peak, where it will cross the Van Horn-Carlsbad Highway. It will cross the Delaware Mountains a few miles south of Guadalupe Peak. From the mountains it will run almost due east to about 2 miles northwest of Wink.

Feeder lines will be built from there to the Yates Pool and other fields that may need service, according to plans. The Standard Oil Co. of California, of which Pasotex is a subsidiary, has holdings in the Yates, Wink and Wheat Fields, which the line can serve.

The line will be built under contract. It will be completed on or before July 1. Work will start from each end. It is estimated that it will cost $3,000,000. A telephone line will parallel.

ACCIDENT DECISION IN BUNKHOUSE CASE

CASPER, Wyo., Mar. 17.—The State Industrial Accident Board of Montana has rendered a decision against the Toole Refining Co. in the famous "bunkhouse case".

Last October, three men with their families were living in a bunkhouse on the refining company's property and an explosion of gas from a leaky pipe killed two of the men and severely injured two more. The men were employes of the refining company and the decision rendered is to the effect that the refinery firm was responsible for the safety of the men even while they were off duty, while living on the company's property. The decision allows $6,000 to each widow of the two men killed and compensation to the two men burned according to the nature of the injuries.

TO OPERATE IN CANADA

Plans for the coming year of The Texas Company through its merger with the California Petroleum Co., include the organization of a new company to operate in Canada. The California Petroleum Co. has a refinery at Lethbridge, Canada, now and this becomes the property of The Texas Company since the merger. This refinery would also enable the Texas Company to ship and refine Montana crude in the Canadian refinery since the withdrawal of import duties.

The Lethbridge refinery has been operated in connection with the company's refinery at Sunburst, Mont. The company also has considerable crude oil production in the Sunburst Field.

NEW MEXICAN OIL TERM

MEXICO CITY, Mexico, Mar. 16. (By Trens Agency).—In view of the considerable quantities of Venezuelan and other crude petroleum now being imported into Mexico to be treated in Mexican refineries, the Petroleum Section, Bureau of Special Taxes, Department of Finance, has adopted the terminology "naturalized foreign" to designate in its reports and statistics, all imported petroleum which has been mixed with Mexican petroleum for purposes of storage or treatment. The new phrase is official and will be used in all communications of this section.

SUIT FOR RECOVERY OF GASOLINE TAXES

CHICAGO, Mar. 17. — The Standard Oil Co. of Indiana and the Benzolene Motor Fuel Co., both of Chicago, have brought suit for a refund of the road tax on gasoline paid during January. In each case the claim is made that the tax was paid under protest and to avoid being deprived of the right to sell gasoline. The suit of the Standard Oil Co. of Indiana is for a little less than $225,000 and the Benzolene company sues for $24,268.90.

An injunction is asked against the responsible state officials to prevent them from disposing of the funds in any way. The decision of the Supreme Court of the State was made just as the checks for the February collections were being sent to the State. In a great number of cases the oil companies succeeded in stopping payment on these checks and the State has since returned them to their makers.

Several of the larger and possibly many other oil companies have notified their regular charge customers that they will give them credit for the tax collected on sales to these customers during February on receipt of invoices. The great difficulty is to return the tax to those station customers who paid cash for their fills and of whom no record was kept and who in very few instances made any record of purchases. In fact the amount of these individual claims would be too small for any one to make any real complaint about.

The great majority of these refunds to individual motorists would be for less than $1. There is no way provided by which a refund of the payments made previous to January 1 can be made except through a lengthy suit before the Supreme Court. The law provides that to recover a payment on a tax which is believed to be illegal there must be a protest filed within 20 days of the payment of the tax. Funds collected as the result of a tax measure passed by the legislature can only be withdrawn from the treasury through an appropriation by the legislature and in the case of the gasoline tax the funds collected must be appropriated for the building, maintenance or improvement of the State roads.

H. H. RAGLE RESIGNS

H. H. Ragle, vice president and assistant general manager of the American Oil Corp., at Jackson, Mich., has resigned his connection with the corporation effective April 15. Mr. Ragle expects to take a vacation following his retirement from the corporation. Definite announcement regarding his future business connections will be made later. Mr. Ragle has served as president of the Michigan Independent Oil Men's Association for several years.

NEW STANDARD DIRECTOR

NEODESHA, Kans., Mar. 17.—Stockholders of the Standard Oil Co. of Kansas, meeting here, re-elected old directors and Earl W. Evans new director to fill the place of Earl H. Rohde, who died recently. A. K. Reppert was elected assistant secretary-treasurer to succeed Mr. Rohde.

NEW BELLEVILLE DEALER

The Schumacher-Karch Oil Co. has been organized at Belleville, Ill., to deal in lubricating oils, gasoline and petroleum products generally. The address is 501 South Second Street, Belleville. The members of the firm are L. A. Schumacher, Sr., L. A. Schumacher, Jr., G. H. Karch and G. P. Karch.

Natural Gasoline Manufacture

PRODUCTION INCREASING IN OKLAHOMA-KANSAS

Natural gasoline production in Oklahoma and Kansas, as shown by the United States Bureau of Mines, had a consistent increase monthly over 1927 and surpasses any other area at present. During 1927 more than one-third of all natural gasoline was produced in the two States. In addition to showing a substantial increase in volume, it has also shown an increase in the percentage it produced compared to the country as a whole. At the beginning of 1927, this section was producing 33.0 per cent of the nation's total and this gradually increased to 38.8 per cent in December.

This increase would not have developed had it not been for the Seminole Field of Oklahoma. During 1926 this section produced 37.0 per cent of the total for the year and it was not until August of 1927 that the monthly percentage figure equaled the 1926 average. After August the effect of Seminole can be clearly seen and while Oklahoma and Kansas did not quite attain the same position as in 1926, the year closed with a large increase and the future of production bid fair to increase further.

Almost the total capacity of these states is being operated by only six companies. The Sinclair Oil & Gas Co. now ranks first in the capacity of the operating plants and the Phillips Petroleum Co. a second. The extensive building program of the Sinclair Oil & Gas Co. in the Seminole Field is responsible for their great increase over last year. This increase now amounts to 285,000 gallons daily and represents 62 per cent of the total of all plants operated by that company in these States.

Other companies have added facilities in the Seminole Field and as a unit have boosted the production there to exceed 800,000 gallons daily. The Empire Oil & Refining Co. added about 116,000 gallons capacity there and the Carter Oil Co. 140,000 gallons, but the Phillips Petroleum Co. and the Gypsy Oil Co., the re-

(Continued on Page 143)

HUMBLE MAY BUILD PLANT IN WINKLER COUNTY POOL

HOUSTON, Tex., Mar. 19.—Humble Oil & Refining Co. is considering construction of a natural gasoline plant in the Hendricks Pool of Winkler County, West Texas. First plans called for a plant having a capacity of 25,000,000 feet of gas daily to be located in what formerly was the center of the field but recent extensions of the pool will force a new location for the proposed plant.

The plant is proposed as a means of utilizing some of the tremendous gas production in that area. If the plant is built, the Humble company is not expecting any particular difficulties in handling the gas, which contains only about 2½ per cent hydrogen sulphide. This is in contrast to gas in the Church Field which contains around 16 per cent. The gas will be run direct to the plant without previous treatment, leaving only the gasoline to be treated. Gas in the Hendricks Field has a gasoline content ranging from one-tenth to six-tenths gallons to the 1,000 feet.

BRAKES ON TANK CARS

The general committee of the Mechanical Division of the American Railway Association has granted an extension to July 1, 1929, within which to comply with the requirements for hand brake power on existing tank cars. The extension was granted at the request of the American Petroleum Institute.

Western Operators Used 336,000,000,000 Cubic Feet of Gas

California natural gasoline plant operators treated 336,094,426,000 cubic feet of natural gas during 1927, the greater part of which was required in the operation of oil absorption units, this method utilizing 210,377,985,000 feet of natural gas, an average of 576,378,000 feet per day during the year. Charcoal absorption plants treated 8,642,432,000 feet of gas during the 12 months of 1927; and while this method required in excess of 1,000,000,000 feet per month during the early part of the year, the input showed a very appreciable decline from June until October, when all charcoal plants ceased operation. Compressor plants required a total of 3,153,405,000 feet, or 8,640,000 feet per day. Combination units consisting of compressors and oil absorption towers utilized 113,920,604,000 feet of gas during the 12 months of 1927. This is an average of 312,111,000 feet per day.

Natural gasoline plants showed a silghtly higher operating status during the first half of 1927, the throughput during this period of 169,053,461,000 feet being 2,012,496,000 feet in excess of plant requirements during the last half. This was undoubtedly due to the rich gas which was being brought to the surface as the result of the intensive drilling in the town lot area of the Huntington Beach Field. A very substantial decline in the production of both crude oil and natural gas took place at Huntington Beach during the early part of 1927, and this would have curtailed the operations of natural gasoline to a very large extent during the latter part of the year if it were not for the intensive development which subsequently characterized operations in the Alamitos Heights town lot area of the Seal Beach Field.

BUYS RANGER PLANT

The Lone Star Gas Co. has purchased the casinghead gasoline absorption plant of the Southern Gasoline Co., located near Ranger, Tex. The consideration was $40,000. The plant was constructed in 1923 and has been in continuous operation since that time.

NATURAL GAS TREATED IN CALIFORNIA DURING 1927 (In M. C. F.)

	Method used				
1927—	Oil absorption	Compression	Combination compression and oil absorption	Charcoal absorption	Total
January	18,106,860	315,576	9,037,186	1,063,973	28,523,595
February	16,844,881	288,674	8,214,702	1,116,403	26,464,660
March	18,173,007	288,477	9,569,317	1,233,686	29,264,487
April	17,572,733	240,993	9,863,006	1,303,399	28,980,131
May	17,550,401	254,556	9,869,917	1,163,690	28,838,564
June	16,506,490	242,393	9,464,263	668,878	26,882,024
July	16,845,565	256,128	9,947,330	716,155	27,765,178
August	17,322,555	260,139	9,671,115	738,058	27,991,867
September	18,256,332	245,040	9,818,961	638,190	28,958,523
October	18,838,133	260,948	9,949,356	(*)	29,048,437
November	17,388,694	247,189	9,154,320	(*)	26,790,203
December	16,972,334	253,292	9,361,131	(*)	26,586,757
Total year	210,377,985	3,153,405	113,920,604	8,642,432	336,094,426
Daily average	576,378	8,640	312,111	23,678	920,807

*Plants shut down October 1, 1927.

A Practical Suggestion

CLEANING ABSORPTION TOWERS

Although practically all modern gasoline plants now erected are equipped with absorbers of the sieve or bubble type, still former practice was to use the baffle type employing such materials as wood grids or steel shavings. Depending on the care in selection and construction of baffling material when the absorbers were originally filled and other conditions such as the percentage of air in gas, the amount and properties of water in the system, the kind of absorption oil and other factors, the gasoline plant operators have experienced more or less trouble due to clogging up. This causes the oil to be carried over in the residue gas lines or channeling of oil and gas so that inefficient stripping results.

When trouble is due to settling or packing of the baffling materials (especially with steel shavings) there is little to do except to empty the absorber and refill with new baffling material or install a more modern type of absorber. However, the trouble is more often caused by accumulations of rust, dirt and finely divided carbon held together by b.s. or amorphous wax, which may be removed easily, cheaply and quickly in the following manner:

First, steam absorber thoroughly and allow condensed water to drain out, then pump a hot solution of lye and a soap powder into the top of absorber through oil inlet. Allow solution time to drain out but do not rinse with water. The solution may be mixed in an old oil drum that has had the head removed, and drawn out by the oil circulating pump. A 30-inch by 40-foot tower will require about 80 gallons of solution, which is made up of two pounds of lye and one pound of soap powder dissolved in five gallons of hot water. Ordinary precautions are exercised in handling the lye.

The oil lines to absorbers in many plants are not fitted with strainers and this is especially important where fire stills are used and carbon precipitated. A simple form of strainer may be made by soldering a cone-shaped screen to a tin disc, which will just fit in the circular groove of a common oil field flange union. Accumulations can be removed periodically.

A NEW FEATURE

Those connected with the construction and operation of natural gasoline plants are invited to contribute to the weekly feature in this issue entitled "A Practical Suggestion."

As indicated by the subject, the purpose of the new feature is to serve as a clearinghouse for ideas which have had practical application in the natural gasoline industry starting with the gathering system in the fields and ending when the finished products are loaded in the tank cars.

Chemists, engineers and others connected with the every-day problems of construction and operation often devise equipment and new operating methods which have contributed largely to the efficiency of the industry. For this particular weekly feature simple suggestions of practical value are wanted rather than complicated methods of construction and processing.

Payments for these suggestions will be made as soon as accepted. Unless requested, names of contributors and the companies with which they are connected will not be published.

PHILLIPS OUTPUT MORE THAN 500,000 GALLONS

The Phillips Petroleum Co., which is the largest manufacturer of natural gasoline in the world, produced 184,194,305 gallons, net, in 1927, according to the annual report of the company which has just been issued. This is an average daily production of 504,641 gallons which compares with a daily average of 443,382 gallons in 1926. The total production of 1926 was 161,834,610 gallons.

In addition to its natural gasoline manufacture the Phillips company sold 105,202,074,000 feet of natural gas in 1927, which contrasts with the 68,023,425,000 cubic feet sold in 1926. Although the company had a substantial increase in its natural gasoline output in 1927, the revenue derived from the sales was much less than in 1926. The annual report states that the average price received in 1927 was 3.19 cents per gallon less than in 1926.

During the past year the Phillips company placed on the market what is known as "Phillips 66" gasoline. This is high gravity and low initial gasoline which contains a large percentage of natural gasoline. The product is being sold through several retail stations which the company erected in 1927 and early this year and is also available to the tank car trade. The company states that the manufacture of the new product coupled with the requirements of a 7,500-bbl. refinery which the company now owns and operates at Borger, Tex., will take care of a large part of its natural gasoline output.

HANDBOOK ON RUSSIAN OIL

The oil production of Soviet Russia showed a gain of more than 1,000,000 tons during 1927 over the output of 1913. This information, along with statistical statements regarding the economic condition of the Soviet Union, is contained in an 80-page handbook just issued by the Amtorg Trading Corp. from its New York Office.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Mar. 20		Mar. 13		Mar. 6	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.05¾	.06	.05¾		.05⅝	.05¾
56-58 450 endpoint	.05¾	.06	.05¾		.05⅝	.05¾
58-60 450 endpoint	.05¾	.06	.05¾	.05⅝	.05¾	
*58-60 437 endpoint (U. S. Motor)	.06417		.06268		.06178	
*60-62 437 endpoint	.06653		.06619		.06597	
*60-62 400 endpoint	.06900		.06875		.06674	
*64-66 375 endpoint	.07125		.07250		.07125	
68-70 360 endpoint	.07¼		.07¼		.07¼	
64-66 437 endpoint (blend)	.06¼	.06⅜	.06¼		.06⅛	.06¼

*Weighted average prices March 19 as reported by representative refiners. Sales to jobbers only.

KANSAS—						
58-60 437 endpoint (U. S. Motor)	.06⅜	.06⅝	.06¼	.06½	.06¼	.06⅜
NORTH TEXAS—						
56-58 450 endpoint	.05¾	.05⅞	.05⅝	.05¾	.05⅝	
58-60 450 endpoint	.05¾	.05⅞	.05⅝	.05¾	.05⅝	
58-60 437 endpoint (U. S. Motor)	.06⅛	.06¼	.06⅛		.06	.06¼
60-62 400 endpoint	.06½		.06½		.06⅜	.06½
64-66 390 endpoint	.06⅝		.06⅝		.06½	.06⅝
64-66 375 endpoint	.06¾		.06¾		.06¾	
68-70 360 endpoint	.07	.07⅛	.07	.07⅛	.07	
64-66 437 endpoint (blend)	.06⅛	.06¼	.06⅛		.06⅛	
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.06½	.06¾	.06½	.06¾	.06⅜	.06½
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.06½		.06½		.06½	
PENNSYLVANIA—						
52-54 Naphtha	.07¾	.08	.07¾	.08	.07½	.07¾
54-56 Naphtha	.07¾	.08	.07¾	.08	.07½	.07¾
58-60 Gasoline	.08	.08¼	.08	.08¼	.07¾	.08
60 Gasoline	.08¼	.08¾	.08½	.08¾	.08	.08¼
62 Gasoline	.08¾	.09	.08¾	.09	.08½	.08¾
64 Gasoline	.09¼	.09½	.09	.09¼	.09	.09¼
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.08½	.09	.08	.08½	.08	.08½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.05¾		.05⅝	.05¾	.05¾	
56-58 450 endpoint	.05¾	.06	.05¾	.05⅞	.05¾	
58-60 437 endpoint (U. S. Motor)	.06¼	.06⅜	.06¼	.06⅜	.06¼	
60-62 400 endpoint	.06⅝		.06½	.06⅝	.06½	.06⅝
64-66 375 endpoint	.07	.07⅛	.07	.07⅛	.07	
68-70 360 endpoint	.07¼	.07⅜	.07¼	.07⅜	.07¼	.07⅜
64-66 437 endpoint (blend)	.06¼	.06⅜	.06¼	.06⅜	.06¼	.06⅜

NATURAL GASOLINE

	Mar. 20		Mar. 13		Mar. 6	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¾		.05		.05	.05¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04⅞	.05	.05	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04		.04	.04⅛	.04⅛	
Grade BB, 84.92, 375 e.p., rec. 85%	.03¾	.03⅞	.04		.04	.04⅛
Grade C, 80-92, 375 e.p, rec. 78%	.03½		.03¾	.03⅞	.03⅞	.04
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅞	.05	.05		.05	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¾	.04⅞	.04⅞		.05	
Grade B, 76-83.9, 375 e.p, rec. 85%	.04	.04⅛	.04	.04⅛	.04⅛	
Grade BB, 84.92, 375 e.p., rec. 85%	.04		.04		.04	.04⅛
Grade C, 80-92, 375 e.p., rec. 78%	.03⅝		.03¾		.04	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.05		.05¼		.05¼	.05⅜
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅞	.05	.04¼		.04¼	.04½
Grade C, 80-92, 375 e.p., rec. 78%	.03¾		.04	.04⅛	.04¼	
CALIFORNIA—						
75-85, 375, 390 endpoint	.07½	.08½	.07½	.08½	.07	
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¾		.05		.05	.05⅛
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04⅞		.05	
Grade B, 76-83.9, 375 e.p, rec. 85%	.04		.04	.04⅛	.04⅛	
Grade BB, 84-92, 375 e.p., rec. 85%	.04		.04		.04⅛	
Grade C, 80-90, 375 e.p., rec. 78%	.03½		.03¾	.03⅞	.04	

BURNING OIL

	Mar. 20		Mar. 13		Mar. 6	
KANSAS—						
41-43 water white Kerosene	.04½	.04⅝	.04½	.04⅝	.04⅜	.04½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	
42-44 water white Kerosene	.04¾	.04⅞	.04¾	.04⅞	.04¾	
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
NORTH TEXAS—						
41-43 water white Kerosene	.04¼	.04⅝	.04¼	.04⅝	.04¼	
40-42 water white Kerosene	.04⅛	.04¼	.04⅛	.04¼	.04	.04⅛
ARKANSAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
PENNSYLVANIA—						
43 Kerosene prime white	.05¾	.06	.05¾	.06	.05¾	.06
45 Kerosene water white	.06	.06¼	.06	.06¼	.06	.06¼
46 Kerosene water white	.06¼	.06½	.06¼	.06½	.06¼	.06½
47 Kerosene water white	.06¾	.06⅞	.06¾	.06⅞	.06½	.06¾
300 Mineral Seal	.07	.07¼	.07	.07¼	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.05½	.06	.05½	.06	.05½	.06
Engine distillate, 43-45, 445 endpoint	.07	.07½	.06½	.07	.06½	.07
Engine distillate, 42-44, 480 endpoint	.06½	.07	.06¼	.06¾	.06¼	.06¾
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04⅜	.04½	.04¼	
42-44 water white Kerosene	.04¾	.04⅞	.04¾		.04⅝	.04¾

FUEL OILS

	Mar. 20		Mar. 13		Mar. 6	
KANSAS—						
18-20 Fuel Oil, per bbl.	.85	.87½	.85	.87½	.85	.87½
22-26 Fuel Oil, per bbl.	.90		.90		.90	
32-36 Gas Oil	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
38-40 Distillate	.03⅛		.03⅛		.03⅛	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.77½	.80	.77½	.80	.75	.80
18-22 Fuel Oil, per bbl.	.82½	.85	.82½	.85	.82½	.85
22-26 Fuel Oil, per bbl.	.85		.85		.85	
24-26 Fuel Oil, per bbl.	.85	.87½	.85	.87½	.85	.87½
26-30 Fuel Oil, per bbl.	.87½	.90	.87½	.90	.87½	.90
28-30 Fuel Oil, per bbl.	.92½		.92½		.92½	
32-36 Gas Oil (dark)	.02½		.02½		.02½	
32-36 Gas Oil (straw distillate)	.02⅝		.02⅝		.02⅝	
36-38 Distillate	.03		.03		.03	
38-40 Straw Distillate	.03	.03⅛	.03	.03⅛	.03	.03⅛
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars), per bbl	.75	.80	.75	.80	.75	.80
32-36 Gas Oil (straw)	.02⅜		.02⅜		.02⅜	
38-40 Straw Distillate	.03		.03		.03	
NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.97½	1.00	.97½	1.00	.97½	1.00
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
ARKANSAS—						
33-36 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
32-36 Gas Oil (straw)	.02¾		.02¾		.02¾	
16-22 Refinery Fuel Oil, per bbl.	.85	.90	.85	.90	.90	.92½
GULF COAST (South Texas)—						
Gas Oil	.04¼	.04½	.04¼	.04½	.04¼	.04½
Fuel Oil, per bbl.	1.15	1.20	1.20	1.25	1.25	
PENNSYLVANIA—						
30-34 Fuel Oil	.04⅞	.05⅛	.04¾	.05	.04¾	.05
36-40 Fuel Oil	.05	.05¼	.05	.05¼	.05	.05¼
CALIFORNIA—						
33-36 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
27-32 Distillate	.02½	.03	.02½	.03	.02½	.03
*15-20 Fuel Oil, Bunker (at tide water)	.85	1.00	.85	1.00	.85	1.00
15-20 Fuel Oil (cargo lots), per bbl.	.75	.85	.75	.85	.75	.85
27 plus Diesel, per bbl.	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3, bbl.	.85	.90	.85	.90	.87½	.90
22-26 Fuel Oil (sellers' cars) Group 3, bbl.	.85	.87½	.85	.87½	.85	.87½
18-22 (Group 3), per bbl.	.82½	.85	.82½	.85	.82½	.85
16-20 Smackover, per bbl.	.90	.92½	.90	.92½	.90	.95
32-36 Gas Oil (zero)	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
32-36 Gas Oil (industrial)	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
36-38 Distillate	.03	.03⅛	.03	.03⅛	.03	.03⅛
38-40 Straw Distillate	.03⅛	.03¼	.03⅛	.03¼	.03¼	

*Bunkers.

LUBRICATING OIL AND WAX

	Mar. 20		Mar. 13		Mar. 6	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
100 vis., 3 color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¼
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
150 vis., 4 color, 20-25 cold test	.08	.08¼	.08	.08¼	.08	.08¼
180 vis., 3 color, 23-28 cold test	.09⅜	.10	.09⅜	.10	.09⅜	.10
180 vis., 4 color, 23-28 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
180 vis., 5 color, 23-28 cold test	.03⅛	.09½	.09⅛	.09½	.09⅛	.09½
200 vis., 3 color, 23-28 cold test	.09½	.10½	.09½	.10½	.09½	.10½
200 vis., 4 color, 23-28 cold test	.09⅜	.10¼	.09⅜	.10¼	.09⅜	.10¼
200 vis., 5 color, 23-28 cold test	.09¼	.10	.09¼	.10	.09¼	.10
240 vis., 3 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
280 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
Cylinder Stocks:						
600, steam refined, light green	.08	.09	.08	.09	.08	.09
600, steam refined, dark green	.06¼	.06⅜	.06¼	.06⅜	.06¼	.06⅜
190-200 vis. @ 210 Bright Stock	.30	.32	.30	.32	.30	.32
150-160 vis @ 210 Bright Stock	.22	.24	.22	.24	.23	.24
Waxes:						
124-126 White Crude Scale Wax	.03⅛	.03¼	.03	.03⅛	.03	
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07¾	.08	.07¾	.08	.07¾	.08
36 Miners' Neutral	.06½	.06¾	.06½	.06¾	.06½	.06¾
150, 3 color	.27	.27½	.27	.27½	.27	.27½
180, 3 color	.30½	.31	.30½	.31	.30	.30½
200, 3 color	.33	.33½	.33	.33½	.33	.33½
220, 3 color	.34½	.35	.35	.35½	.34½	.35
600, steam refined	.09¼	.09½	.09½	.09¾	.09¼	.09½
635, steam refined	.10¼	.10½	.10¼	.10½	.10¼	.10½
650, steam refined	.11½	.12	.11½	.12	.10¾	.11¼
600, Pennsylvania flash	.14	.15	.15	.16	.15	.16
*550, E filtered	.14½	.15	.15½	.15¾	.15	.15½
*600, E filtered	.15½	.15¾	.15½	.16	.15½	.16
600, E filtered	.14¾	.15¼	.15¼	.15¾	.15¼	.15¾
600, D filtered	.22	.23	.23½	.24	.23½	.24
550, E filtered	.15½	.16	.15½	.16	.15½	.16
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.26½	.27	.27	.27½	.27	.27½
†122-124 White Crude Scale Wax	.03⅞	.03¼	.03⅛	.03¼	.03	.03⅛
124-126 White Crude Scale Wax	.03⅞	.03¼	.03⅛	.03¼	.03⅛	

*At Warren, Pa. †At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07½	.08	.07½	.08	.06½	.07½
No. 3 color, 200 vis, pale oil	.07½	.08½	.07½	.08½	.09	.09½
No. 3 color, 300 vis., pale oil	.08½	.09½	.08½	.09½	.10½	.11½
No. 3½ color, 500 vis., pale oil	.12	.13	.12	.13	.12	.13
No. 4 color, 750 vis., pale oil	.14	.15	.14	.15	14	.15
No. 5 to 6 color, 200 vis., red oil	.07½	.08	.07½	.08	.07½	08
No. 5 to 6 color, 300 vis., red oil	.08½	.09	.08½	.09	.08½	.09
No. 5 to 6 color, 500 vis., red oil	.09½	.10½	.09½	.10½	.09½	.10½
No. 5 to 6 color, 750 vis., red oil	.12	.12½	.12	.12½	.12	.12½
No. 2½ color, 200 vis., pale filtered	.11½	.12	.11½	.12	.11½	.12
No. 2½ color, 300 vis., pale filtered	.13	.13½	.13	.13½	.13	.13½
No. 2½ color, 500 vis., pale filtered	.14	.15	.14	.15	.14	.15
No. 2½-3 color, 750 vis., pale filtered	.17½	.19	.17½	.19	.17½	.19

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

CALIFORNIA—						
130 vis., 2½-3 color	.09	.10	.09	.10	.09	.10
200 vis., 2½-3 color	.10	.10½	.10	.10½	.10	.10½
300 vis., 3-3½ color	.10½	.11	.10½	.11	.10½	.11
350 vis., 3½-4 color	.11	12	.11	.12	.11	.12
400 vis., 3½-4 color	.13	.14	.13	.14	.13	.14
Red Neutral:						
200 vis., 4½-5 color	.08½	.09	.08½	.09	.08½	.09
300 vis., 5-6 color	.09	.10	.09	.09½	.09	.09½
400 vis., 5-6 color	.10½	.11	.11	.11½	.11	.11½
500 vis., 4½-5 color	.11½	.12	.11½	.12	.11½	.12
500 vis., 5-6½ color	.11	.11½	.11	.11½	.11	.11½
600 vis., 6 plus color	.12½	.13	.12	.12½	.12	.12½

Note: Bright Stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Mar. 20	Mar. 13	Mar. 6
Gasoline, U. S. Motor, 58-60 437	.08¾	.08½	.08½
Kerosene, water white, 41-43	.07½	.07½	.07½
*Fuel Oil, bunker "C," 14-16, per bbl.	1.35	1.35	1.35
*Fuel Oil, Diesel, 28-30, per bbl.	2.00	2.00	2.00
Gas Oil, 28 plus	.05¼	.05¼	.05¼
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07	.07	.07
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.10½	.10½	.10½
225 red Paraffin Oil	.09½	.09½	.09½
200 red Paraffin Oil	.09	.09	.09
Refined Wax:			
120-122 a.m.p., per lb.	.04	.04	.04
125-127 a.m.p., per lb.	.04¼	.04¼	.04¼
130-132 a.m.p., per lb.	.04¾	.04¾	.04¾
135-137 a.m.p., per lb.	.05½	.05½	.05½
Petrolatum, in bbls., carload lots, per lb.:			
Dark green	.02	.02	.02
Amber	.03⅜	.03⅜	.03⅜
Extra amber	.03¾	.03¾	.03¾
Cream	.06½	.06½	.06½
Lily White	.08⅜	.08⅜	.08⅜
Snow White	.09⅜	.09⅜	.09⅜

*Lighterage, 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Mar. 20	Mar. 13	Mar. 6
Gasoline, U. S. Motor, 58-60 437, in cases	.2465	.2390	.2365
Kerosene, standard white, in cases	.1690	.1690	.1690
Kerosene, water white, in cases	.1790	.1790	.1790
600, steam refined cylinder stock, in bbls.	.17	.17	.17
635, steam refined	.19	.19	.19
650, steam refined	.20	.20	.20
600, Pennsylvania flash	.23	.23	.23
630, Pennsylvania flash	.35	.35	.35
600, Warren E	.25	.25	.25
600, Oil City E	.24	.24	.24
Light 135 Bright Stock	.40	.40	.40
Dark 135 Bright Stock	.38	.38	.38

LOS ANGELES EXPORT PRICES

	Mar. 20		Mar. 13		Mar. 6	
Kerosene, water white	.05	.05¼	.04¾	.05	.04¾	.05
U. S. Motor Gasoline, 53-55 437 e.p.	.06¼	.06½	.06¼	.06½	.06¼	.06½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927) $1.00
Other fields ..... See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE
Carson and Hutchinson

Below 31 gravity	$ .60
31-31.9	.65
32-32.9	.70
33-33.9	.73
34-34.9	.76
35-35.9	.79
36-36.9	.82
37-37.9	.85
38-38.9	.88
39-39.9	.91
40-40.9	.94
41-41.9	.97
42-42.9	1.00
43-43.9	1.03
44 and above	1.06

Wheeler County

Below 29 gravity	$ .60
29-29.9	.65
30-30.9	.70
31-31.9	.75
32-32.9	.80
33-33.9	.83
34-34.9	.86
35-35.9	.89
36-36.9	.92
37-37.9	.95
38-38.9	.98
39-39.9	1.01
40-40.9	1.04
41-41.9	1.07
42-42.9	1.10
43-43.9	1.13
44 and above	1.16
Gray County	See gravity table

Humble Oil & Refining Co. Magnolia Petroleum Co. February 21.

*Iatan	Same as North Texas
Crane-Upton-Crockett	See gravity table
†Glasscock	.60
†Chalk	.80

*Includes Howard County and Westbrook Fields. Marland Refining Co. pays $1.05 for Howard County crude, effective May 21.
†Magnolia Petroleum Co., Jan. 14, 1928.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (Feb. 7, 1928)	$ .75
Bellevue (Feb. 24, 1927)	1.20
Urania (Nov. 18, 1927)	.75
East El Dorado (March 16, 1927)	1.00
Other fields	See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co. and Magnolia Petroleum Co.; (Magnolia Petroleum Co. posted Cotton Valley February 3); Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

‡Grade A (March 14)	$1.20
Grade B	See gravity table
*Jennings, La. (March 14)	$1.05
†Saratoga, Batson, Daytona (March 14, 1927)	$1.20
‡Markham (March 14)	1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil & Refining Co. and other major buyers. §The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (May 5)	$1.00
†Mirando (March 14)	1.00
Rockdale-Minerva (April 15):	
Below 38 gravity	1.25
38-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31

(Continued on Page 134)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Okla., Kans., N. C. Tex.	2 No. La. and Arkansas	3 Smackover, Ark.	4 Stephens, Ark	5 Gray County (Texas Panhandle)	6 Crane, Upton, Crockett, Winkler Counties (West Texas)	7 Salt Creek, Wyo.	8 Grade B & Light Crude (G. Coast)	9 Somerset (South Central Texas)
24 and above	....	....	.90	....	....	....	....	....	....
Below 24	.76	....	.75	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	....	1.15	....
24 to 24.9	.76	....	....	....	....	....	....	....	....
25 to 25.9	.81	....	....	....	....	....	....	....	....
Below 26	....	....	....	....	.60	.60	....	....	....
26 to 26.9	.86	....	....	....	.60	.60	....	1.19	....
27 to 27.9	.91	....	....	....	.65	.60	....	1.21	....
Below 28	....	.91	....	.85	....	....	....	....	....
28 to 28.9	.96	.96	....	.87	.70	.60	....	1.23	....
29 to 29.9	1.01	1.01	....	.89	.75	.60	1.01	1.25	....
30 to 30.9	1.06	1.06	....	.91	.80	.60	1.06	1.27	....
31 to 31.9	1.11	1.11	....	.93	.85	.60	1.11	1.29	....
32 to 32.9	1.16	1.16	....	.95	.90	.60	1.16	1.31	1.05
33 to 33.9	1.19	1.19	....	....	.93	.60	1.19	1.33	1.07
34 to 34.9	1.22	1.22	....	....	.96	.60	1.22	1.35	1.09
35 to 35.9	1.25	1.25	....	....	.99	.60	1.25	1.37	1.11
36 to 36.9	1.28	1.28	....	....	1.02	.60	1.28	....	1.13
37 to 37.9	1.31	1.31	....	....	1.05	....	1.31	....	1.15
38 to 38.9	1.34	1.34	....	....	1.08	....	....	....	1.17
39 to 39.9	1.37	1.37	....	....	1.11	....	....	....	....
40 to 40.9	1.40	1.40	....	....	1.14	....	....	....	....
41 to 41.9	1.43	1.43	....	....	1.17	....	....	....	....
42 to 42.9	1.46	1.46	....	....	1.20	....	....	....	....
43 to 43.9	1.49	1.49	....	....	1.23	....	....	....	....
44 to 44.9	1.52	1.52	....	....	1.26	....	....	....	....
45 to 45.9	1.55	1.55	....	....	....	....	....	....	....
46 to 46.9	1.58	1.58	....	....	....	....	....	....	....
47 to 47.9	1.61	1.61	....	....	....	....	....	....	....
48 to 48.9	1.64	1.64	....	....	....	....	....	....	....
49 to 49.9	1.67	1.67	....	....	....	....	....	....	....
50 to 50.9	1.70	1.70	....	....	....	....	....	....	....
51 to 51.9	1.73	1.73	....	....	....	....	....	....	....
52 and above	1.76	1.76	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted schedule February 21, 1928, making price below 30 gravity $.75 per barrel, 30-30.9 gravity $.90 and 31-31.9 gravity $1.06, with 3 cents increase per degree higher in gravity, taking 32-32.9 gravity at $1.16 as basis, with a top price of $1.76 for 52 and above.

Humble Oil Refining Co. posted $1.52 on all oil 44 gravity and above.

Oklahoma—Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., Carter Oil Co., The Texas Company, February 21.

North Central Texas—[Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas), Iatan and Panola (Magnolia only. Iatan posted a flat price of $.93 by Magnolia on January 14, 1928). Currie, Nocona, Moran and Corsicana light]; Texas, Prairie, Sinclair and Gulf; The Texas Company, Humble Oil & Refining Co., February 21.

Kansas—Prairie, Sinclair; Carter, The Texas Company, February 21.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer and El Dorado only]; Standard Oil Co. of Louisiana, Texas Pipe Line Co., Louisiana Oil Refining Co., February 21 and Magnolia Petroleum Co. February 23.

Column 3—February 6, Louisiana Oil Refining Co. February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co. February 8, and Atlantic Production Co. February 10.

Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., The Texas Company, February 22.

Column 5—Humble Oil & Refining Co., Magonlia Petroleum Co., February 21.

Column 6—Humble Oil & Refining Co., August 23; Marland Refining Co., Magnolia Petroleum Co., and Gulf Pipe Line Co., August 24.

Column 7—Midwest Refining Co., February 21. All crude over 37 gravity, $1.31 per barrel.

Column 8—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. posted 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 9—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CALIFORNIA CRUDE OIL PRICES
Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)*

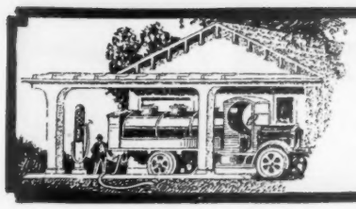
Gravity—	1 Fullerton, Seal Beach, Huntington Beach, Richfield, Rosecrans-Dominguez, Torrance-Inglewood	2 Whittier, La Habra, Montebello	3 Kern River, Newhall-McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Coyote	5 Santa Fe Springs	6 Coalinga	7 Wheeler Ridge	8 Santa Maria, Ventura, Orcutt, Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.82	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.02	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.16	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura and Orcutt, 14 to 39 degrees. Posted by Union Oil Co.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns March 20.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago dist.	14.0	16.0	...	12.0
Decatur, Ill.	13.5	15.5	...	12.1
E. St. Louis	13.1	15.35	...	11.2
Joliet	14.4	16.4	...	12.3
Peoria	14.2	16.2	...	12.1
Quincy	14.2	16.2	...	11.9
Davenport, Ia.	17.5	19.5	3.0	12.3
Des Moines	15.9	17.9	3.0	12.3
Keokuk	17.5	19.5	3.0	12.3
Sioux City	17.1	19.1	3.0	11.9
Duluth, Minn.	15.5	17.5	2.0	12.9
Minneapolis	16.0	18.0	2.0	12.9
Mankato	14.1	16.1	2.0	12.7
La. Crosse, Wis.	17.2	19.2	2.0	13.0
Milwaukee	16.1	18.1	2.0	11.9
Madison	16.3	18.3	2.0	12.1
Detroit, Mich.	17.8	19.8	3.0	13.7
Grand Rapids	17.7	19.7	3.0	13.6
Saginaw	17.9	19.9	3.0	13.8
Evansville, Ind.	17.0	19.0	3.0	13.0
Ft. Wayne	16.4	17.4	3.0	13.4
Indianapolis	17.2	19.2	3.0	12.2
South Bend	17.4	19.4	3.0	13.4
Fargo, N. D.	18.9	20.9	3.0	14.9
Huron, S. D.	19.5	21.5	4.0	13.9
Sioux Falls	18.0	20.0	4.0	13.4
*K. C., Mo.	14.9	16.9	3.0	10.6
*Springfield	16.8	18.8	3.0	11.5
*St. Louis	15.6	17.9	2.5	11.3
*St. Joseph	14.5	16.5	3.0	11.2
Wichita, Kans.	14.8	16.8	2.0	10.8
Bartlesville, Ok.	15.5	17.5	3.0	10.5

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	14.7	9.5
V. M. & P. naphtha	16.2	11.0
Cleaner's naphtha	18.0	12.0
Stanisol	19.0	12.5

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

Tank wagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

Outside the Chicago district, the following quantity discount schedule is in effect on monthly tank wagon deliveries of gasoline: 6,000 gallons or more, 1¼ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. These discounts include the 1 cent allowed on dumps of 50 gallons or more at one delivery.

Within the Chicago district, the following quantity discount schedule is in effect on tank wagon deliveries of gasoline: 750 to 2,000 gallons, one-half cent; 2,000 to 3,000 gallons, three-fourths cent; 3,000 to 6,000 gallons, 1 cent; 6,000 to 10,000 gallons, 1½ cents; 10,000 to 15,000 gallons, 2 cents; 15,000 gallons or more, 3 cents. These discounts are in addition to the special discount of 1 cent on dumps of 100 gallons or more at one delivery.

If the quantity bought during the year is equal to or exceeds 12 times the agreed monthly quantity, the discount is paid or credited on the entire quantity at the close of the term less the monthly payments made during the year.

*State tax 2 cents; remainder city tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
All Ohio points	17.0	19.0	3.0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.*

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	13.0	17.0	3.0	11.0
Fort Worth	14.0	17.0	3.0	11.0
Houston	13.0	17.0	3.0	15.0
San Antonio	14.0	17.0	3.0	10.0
El Paso	15.0	18.0	3.0	16.0
Texarkana	16.0	20.0	3.0	12.0
Muskogee, Ok.	16.0	17.0	3.0	11.0
Okla. City	15.0	16.0	3.0	11.0
Tulsa	15.0	16.0	3.0	11.0
Ft. Smith, Ark.	17.0	18.0	5.0	11.0
Little Rock	20.0	21.0	5.0	12.0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, one-half cent; over 2,000 gallons, three-quarters cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1¼ cents; over 400 gallons, 1½ cents; over 500 gallons a month, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases in the tank wagon discounts.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
*N. Orleans, La.	15.5	18.5	3.0	14.0
Baton Rouge	14.0	17.0	2.0	12.5
Alexandria	15.0	18.0	2.0	14.0
LaFayette	15.0	18.0	2.0	13.5
Lake Charles	15.5	18.5	2.0	14.0
Shreveport	15.5	18.5	2.0	13.0
Kn'xville, T'nn.	19.5	22.5	3.0	15.0
Memphis	17.0	18.5	3.0	14.0
Chattanooga	19.5	22.5	3.0	15.0
Nashville	18.0	21.0	3.0	15.0
Bristol	19.0	22.0	3.0	14.0
Lit. Rock, Ark.	20.0	21.0	5.0	12.0

*Tax of 3 cents includes city tax of 1 cent.
*Louisiana kerosene prices include 1-cent State tax and 1-cent parish tax.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	17.0	19.0	4.0	14.0
Augusta	19.0	22.0	4.0	16.5
Macon	16.0	19.0	4.0	13.5
Savannah	17.0	19.0	4.0	14.5
Birm'h'm, Ala.	18.0	21.0	4.0	14.5
Mobile	17.0	20.0	4.0	14.0
Montgomery	16.0	19.0	5.0	15.5
Clarks'le, Miss.	17.0	20.0	4.0	11.5
Jackson	17.0	20.0	4.0	11.5
Natchez	16.5	19.5	4.0	14.0
Gulfport	18.5	21.5	6.0	14.0
Vicksburg	16.5	19.5	4.0	14.0
Jack'ville, Fla.	18.0	21.0	5.0	11.5
Miami	20.0	23.0	5.0	14.5
Pensacola	19.0	22.0	5.0	13.0
Tampa	18.0	21.0	5.0	13.0
Lexington, Ky.	18.0	21.0	5.0	15.5
Covington	19.0	22.0	5.0	15.5
Louisville	18.0	21.0	5.0	15.0

In addition to the State tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline. Kerosene prices in Georgia includes 1 cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene only. Pensacola tax includes 1 cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to State tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	16.0	*22.0	...	13.0
Philadelphia	15.0	*21.0	...	13.0
Scranton	16.0	*22.0	...	13.0
Allentown	16.0	*22.0	...	13.0
Altoona	16.0	*22.0	...	13.0
Erie	12.0	*18.0	...	13.0
Dover, Del.	19.0	22.0	3.0	13.0
Wilmington	19.0	22.0	3.0	12.0
Spring'd, Mass.	18.0	18.0	...	15.0
Worcester	18.0	18.0	...	15.0
Boston	18.0	18.0	...	15.0
Providence, R.I.	20.0	20.0	2.0	15.0
Hartford, Conn.	20.0	20.0	2.0	14.0
New Haven	20.0	20.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	17.0	19.0	...	15.0
*New York	17.0	19.0	...	15.0
Buffalo	15.0	18.0	...	14.0
Rochester	15.0	18.0	...	14.0
Syracuse	17.0	19.0	...	15.0
Boston, Mass.	18.0	19.0	...	15.0
Augusta, Me.	21.0	23.0	4.0	15.0
M'nch't'r, N. H.	21.0	22.0	4.0	15.0
Burlington, Vt.	20.0	22.0	3.0	15.0

*Price in steel barrels.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	16.75	17.25	2.0	12.25
McCook	16.75	16.75	2.0	11.50
Norfolk	16.75	18.75	2.0	12.75
N. Platte	17.75	19.75	2.0	13.50
Scottsbluff	17.25	19.25	2.0	13.00

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco	17.0	21.0	3.0	15.5
Pueblo	18.0	18.0	3.0	15.5
Los Angeles	16.5	20.5	3.0	15.5
Reno, Nev.	22.0	26.0	4.0	19.0
Portland, Ore.	17.5	21.5	3.0	16.5
Seattle, Wash.	16.5	20.5	2.0	16.5
Tacoma	16.5	20.5	2.0	16.5
Spokane	20.5	24.5	2.0	20.5
Phoenix, Ariz.	23.0	27.0	4.0	20.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City	18.0	20.0	2.0	14.0
Newark, N. J.	18.0	20.0	2.0	14.0
Annapolis, Md.	20.0	23.0	4.0	12.0
Baltimore	20.0	23.0	4.0	10.0
Cumberland	20.0	23.0	4.0	14.0
Washington	18.0	21.0	2.0	12.0
Danville, Va.	20.5	....	4.5	14.0
Norfolk	20.5	23.5	4.5	12.0
Petersburg	20.5	23.5	4.5	14.0
Roanoke	20.5	23.5	4.5	14.0
Richmond	18.5	21.5	4.5	14.0
Ch'rlst'n, W.Va.	20.0	23.0	4.0	14.0
Keyser	20.0	23.0	4.0	14.0
Parkersburg	17.0	20.0	4.0	14.0
Wheeling	20.0	23.0	4.0	14.0
Charlotte, N. C.	20.0	23.0	4.0	14.0
Hickory	20.0	20.0	4.0	14.0
Mt. Airy	20.0	23.0	4.0	14.0
Salisbury	20.0	23.0	4.0	14.0
Charlst'n, S. C.	20.0	23.0	5.0	14.0
Columbia	20.0	23.0	5.0	14.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	17.0	19.0	3.0	14.5
Pueblo	17.0	19.0	3.0	14.5
Grand Jct.	20.5	22.5	3.0	18.0
Casper, Wyo.	17.0	19.0	3.0	13.0
Cheyenne	18.0	20.0	3.0	14.5
Butte, Mont.	22.5	22.5	3.0	19.0
Helena	22.5	24.5	3.0	19.0
Salt L'ke, Utah	20.0	21.0	3.5	17.0
Aubu'que, N. M.	21.0	24.0	5.0	17.0
Boise, Idaho	23.5	25.5	4.0	19.0
Twin Falls	23.5	25.5	4.0	19.0

TANK WAGON CHANGES

March 12—Standard Oil Co. of Louisiana advanced kerosene 1 cent at La Fayette, La., to 13.5 cents.

March 14—Standard Oil Co. of Indiana increased the gasoline tank wagon and station prices 2 cents at Sioux Falls, S. Dak., to 18.0 and 20.0 cents.

March 15—Standard Oil Co. of Louisiana increased the gasoline tank wagon and station prices 1 cent and the kerosene price 1 cent at Little Rock, Ark.

March 16—Continental Oil Co. increased the gasoline tank wagon and station prices 1 cent in Denver and Pueblo, Colo., making the new prices 17.0 and 19.0 cents.

March 10—Magnolia Petroleum Co. increased the gasoline tank wagon and station prices 1.0 cent in Oklahoma City, Okla., to 15.0 and 16.0 cents.

March 14—Magnolia Petroleum Co. increased the gasoline tank wagon and station prices 1.0 cent at Little Rock, Ark., making the new prices 20.0 and 21.0 cents. Kerosene was advanced 1.0 cent there to 12.0 cents.

CALIFORNIA MARKET FURTHER STRENGTHENED

LOS ANGELES, Calif., Mar. 17.—There has been a further strengthening in the tank wagon price of motor gasoline during the past week. The past two days especially have brought forth a tightening up in the market which has resulted in an improvement in price. Quotations which were made at around 8 cents a week ago are now being made at 8½ cents and higher. There seems to be a temporary shortage in the spot market and prices here are also improved. It is possible this condition is due to a few of the smaller refiners being either shut down while making changes or else operating at a reduced rate. At the same time, the demand has shown a decided improvement and some marketers think the start of the heavier consumption period is about to arrive.

Although the wholesale market is looking much better, this condition has not yet been reflected in the retail market. Independent service stations are in many cases still displaying cut price signs, a few as low as 7 gallons for $1. If the wholesale market continues to improve as during the past week, an improvement must follow in the retail situation also, and these signs will necessarily have to come down.

There has been a rumor during the past 10 days that both light gravity crude oil and gasoline prices are soon to be advanced. At present it is hardly conceivable that gasoline will increase but it is very possible light crude prices will be revised upward.

Kerosene has shown a steady improvement during the past few weeks and is at present strong, the domestic grade bringing from 5½ to 6 cents while kerosene for export is holding firm at 5 cents. Lubricating oils continue to mark time. This market has been weak for a long period and while slightly improved at present, it is not expected to show any great strength in the near future.

CRUDE OIL PRICES

(Continued from Page 133)

*Thrall	....
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12)	$1.25
Salt Creek	See gravity table
Big Muddy (March 12)	$1.25
Mule Creek (May 1)	1.10
Grass Creek, heavy	.90
Grass Creek, light	1.32
Elk Basin (March 12)	1.32
Lance Creek (March 12)	1.32
Poison Spider	1.00
Notches	.65
Rex Lake (February 22)	1.10
Osage	1.32
Lost Soldier (contract)	.95
Greybull-Torchlight	1.32
Hamilton Dome	.85
Cat Creek (Mont.)	1.32
Sunburst (Mont.) (Jan. 25, 1928)	1.50
Artesia (March 12)	1.00
Hogback (N. Mex.) (March 14)	1.32

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective December 17)

Penna Grade Oil in New York Transit Line (New York)	$2.80
Bradford District Oil in National Transit Lines (Pennsylvania)	2.80
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.65
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	2.65
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.60
Penna Grade Oil in Buckeye Pipe Line lines (Ohio)	2.35
Cabell Grade Oil in Eureka Pipe Line lines (West Virginia) (February 9, 1928)	1.95
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (December 19)	1.45
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (December 19)	1.45
Somerset Oil in Cumberland Pipe Line lines (Kentucky) (February 9, 1928)	1.45
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (August 1)	.95
Keister (Pennsylvania) (August 1)	1.10

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective March 14, 1927)

Lima (February 10)	$1.55
Wooster	1.57
Illinois (Feb. 23, 1928)	1.50
Indiana (Feb. 10, 1928)	1.32
Princeton (Feb. 23, 1928)	1.50
Plymouth (Feb. 23, 1928)	1.32
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.32
**Saginaw, Mich., Saginaw Sand (May 27)	2.05
**Saginaw, Mich., Berea Sand (May 27)	1.95
†Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 16)	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
§Oil Springs (Canada) (February 16, 1928)	2.02
§Petrolia (Canada) (February 10, 1928)	1.95

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.
**Posted by Sun Oil Co.

MEXICAN CRUDE

Note—Due to the fact that the exportation of Tuxpam light crude oil has become a negligible factor, prices will no longer be published.

*Panuco heavy (f.o.b. Mex. ports)	$1.15

*$.15.

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Oil Securities in Fractional Gain

Sinclair Consolidated and Union of California Outstanding Features. Rumors of Mergers Interest Market

During another week in which the general market was characterized by highly specialized trading, the oils showed fractional gains with two outstanding features in Sinclair Consolidated, and Union of California.

Sinclair activity occasioned considerable interest, and judged by its volume, was being handled by powerful interests. Opening sales of 7,000 and 8,000 shares with one daily volume of 226,000 shares indicated the strength of the finances involved in these transactions. While there were many rumors on this activity there was no real knowledge of the origin of the movement which was alternately reported as representing Chicago interests, Frank Phillips and a group of associates.

One report indicated that the Morgan interests which own substantial holdings in Sinclair were anxious to effect a merger of this company with the Marland Oil Co. which has recently been under reorganization. It is reported that Morgan now dominates Marland, and is anxious to merge that concern with another oil.

Union of California was very active last week, rising to new grounds.

Prairie Pipe Line Co. sold at $223 after the announcement that this stock would be placed upon a dividend of $14 per share. The strength of Prairie Pipe was to a certain amount reflected in other pipe line stocks which were uniformly strong. Regardless of the condition of the other branches of the oil industry, the vast quantities of crude being produced must be transported, and the lines have had an exceptionally prosperous year, with nothing in sight to change their outlook.

Proposal of the controlling interests in Cumberland Pipe Line Co. to distribute $30 per share in connection with capital reduction was another note in the oils. Early last year Cumberland Pipe paid $33 per share for liquidating part of security holdings in their income tax account.

Phillips Petroleum Co.

Consolidated balance sheet of Phillips Petroleum Co. as of December 31, 1927, compares as follows:

	1927	1926
Assets		
Plant and property	‡$110,721,721	‡$146,413,076
Accounts and notes receivable	2,431,830	5,809,742
Market securities.	398,274	.....
Inventories	11,110,840	8,737,656
Prepaid expenditures	.....	643,626
Employes stock account	768,927	.....
Cash	5,915,848	4,424,175
Call loans	9,950,000	.....
Due on stock warrants	.....	6,299
Advances	557,901	.....
Deferred charges	1,634,759	240,352
Total	$143,490,100	$166,274,927
Liabilities		
Capital stock	*$57,010,241	‡$105,367,160
Bonds	36,245,000	.....
Purchase money obligation	.....	3,449,388
Notes payable	.....	5,739,692
Accounts payable.	1,641,066	1,821,466
Dividends payable	1,795,929	1,805,312
Depreciation and depletion reserve	.....	45,214,987
Accrued items and tax reserve	1,103,504	2,876,921
Surplus from appreciation of property	17,458,261	.....
Earned surplus	28,235,999	.....
Total	$143,490,100	$166,274,927

*Represented by 2,394,571 no par shares. ‡After depreciation and depletion. §Includes surplus ¶Before reserve for depreciation and depletion.

Ohio Oil

Statement of Ohio Oil Co. as of December 31, 1927, shows total assets of $104,445,746 comparing with $107,669,936 at end of 1926, and profit and loss surplus of $40,494,884 against $41,045,431.

Surplus account states that "additions" in 1927 amounting to $7,314,571 were credited to this account, making total of $48,360,003, from which dividends of $7,865,119 were paid, making profit and loss surplus as of December 31, 1927, $40,494,484. In 1926 company reported net income of $13,536,904 after charges and Federal taxes, equal to $5.64 a share (par $25) on 2,400,000 shares of stock.

Consolidated balance sheet of Ohio Oil Co. as of December 31, 1927, compares as follows:

	1927	1926
Assets		
Plant	$35,603,551	$29,230,258
Cash	374,170	1,552,840
Accts. rec.	3,704,100	4,102,004
Inventories	34,243,489	33,867,609
Investments	27,980,779	36,382,079
Unajd. debts	2,548,657	2,535,146
Total	$104,454,746	$107,669,936
Liabilities		
*Capital stock	$60,000,000	$60,000,000
Funded debt	.....	267,000
Accts. pay.	2,486,518	1,317,707
Unadj. cred.	219,328	264,244
Res. for tax., etc.	884,067	4,425,086
Min. int. subs.	369,949	350,468
Surplus	40,494,884	41,045,431
Total	$104,454,746	$107,669,936

*Par $25.

National Supply

Report of National Supply Co. of Delaware and subsidiaries for year ended December 31, 1927, shows net income of $2,781,555 after interest, Federal taxes, depreciation, etc., equivalent after 7 per cent preferred dividends, to $8.59 a share (par $50) earned on 265,900 shares of stock. This compares with $4,534,161 or $15.18 a share in 1926.

Consolidated income account for year 1927 compares as follows:

	1927	1926
Gross income	$ 9,142,489	$10,678,363
Expenses	4,927,344	4,831,742
Balance	4,215,145	$ 5,846,621
Other income	681,906	886,370
Total income	$ 4,897,051	$ 6,732,991
Int., ord. taxes, depr.	1,254,442	1,173,996
Federal taxes	511,054	315,353
Pension Fed. reserve	350,000	209,481
Net income	$ 2,781,555	$ 4,534,161
Preferred dividends	495,597	496,132
Common dividends	1,571,428	1,503,468
Surplus	$ 714,170	$ 2,534,561

Consolidated balance sheet of National Supply Co. of Delaware, and subsidiaries as of December 31, 1927, compares as follows:

	1927	1926
Assets		
*Land, bldgs., mch., plant, etc.	$ 6,788,193	$ 7,005,664
Cash and ca. ins.	7,141,033	3,252,483
Nte. and ac. rec.	11,368,489	14,285,915
Short time inv.	.....	1,049,368
Inventories	13,950,938	14,609,568
Investments	$38,616	322,128
Def. charges	10,174	29,306
Total	$39,597,443	$40,556,432
Liabilities		
Preferred stock	$ 7,095,100	$ 7,095,100
Common stock	†13,295,000	†13,295,000
Accounts payable	2,477,555	3,988,075
Accr. wgs., etc.	46,466	150,949
Federal tax	511,054	315,353
Ins. and pen. res.	1,093,069	896,630
Surplus	15,079,199	14,814,376
Total	$39,597,443	$40,556,432

*After depreciation. †Represented by 265,900 shares, par $50.

Regarding 1927 operations of National Supply Co., James H. Barr, chairman, says increased drilling and huge supply of crude oil in Seminole area early last year practically stopped drilling operations elsewhere and finally resulted in shutdown movement in Seminole. "As a consequence," he says, "our sales the first quarter were exceptionally good, gradually declining the balance of the year. Decrease in sales in latter part of the year was largely responsible for large accumulation in cash appearing in the balance sheet, which cash, we expect, will be again employed when drilling activities increase.

"The company is in remarkably good condition, both as to facilities, personnel and organization. While the condition of the oil industry today is not such as to lead us to expect any immediate marked increase in our business, it is reasonable to expect a continued gradual improvement."

Amerada Corp.

Net earnings of the Amerada Corporation for 1927, after all charges including depletion, depreciation, drilling expenses and taxes, totaled $3,706,715, equivalent to $4.02 per share on the 922,075 shares outstanding at the end of the year. Although the year was generally unsatisfactory for oil companies, the corporation reported record gross operating income of $17,211,117, and was able to show net profits equal to more than twice its dividend requirements.

"The year 1927 was a satisfactory one for the corporation," President E. L. DeGolyer said in his report. "Although net profits were lower, almost every other item of the corporation's activities, including production of oil, gas, natural gasoline, oil in storage, wells producing, reserve, leaseholds, gross income, working capital, etc., showed a sizeable increase."

A comparison of the corporation's earnings for 1927 and 1926 follows:

	1927	1926
Gross operating income	$17,211,117.09	$14,746,502.64
Operating and admns., exp'ses, taxes, leases, abd., etc	8,180,585.95	5,357,729.78
Opr. Income	$ 9,030,531.14	$ 9,388,772.86
Other income	677,311.04	252,533.23
Total Income	$ 9,707,842.18	$ 9,641,306.09
Depr., depltn., drlg. expenses and provision for con'gncies	6,001,127.00	4,708,222.72
Net income	$ 3,706,715.18	$ 4,933,083.37
*Earnings per share on stock outstanding at the end of each period, after all charges	$4.02	$6.05

*Outstanding at the end of 1927, 922,075 shares; outstanding at the end of 1926, 814,800 shares.

"The oil industry is still suffering from overproduction," Mr. DeGolyer said. "The flush production of the Seminole Field has not declined as rapidly as had been anticipated and considerable new production has been developed in West Texas. Much progress has been made by the industry as a whole, however, in restricting operations and regulating production. There is no immediate relief in sight but it is hoped that further achievements in regulation will be made effective and that with the consequent establishment of reserves, prices will be more satisfac-

(Continued on Page 143)

LIST OF ACTIVE PETROLEUM STOCKS

Stocks—	Par	Clos. Quot. Mar.19	Clos. Quot. Mar.5	1928 High	1928 Low	1927 High	1927 Low	1926 High	1926 Low
Amerada Corp.	..	30⅛	29½	32¾	27½	37⅛	27⅝	32⅝	24¾
Atlantic Refining, com.	100	108½	107½	109⅞	95¾	131¾	107	128⅜	97
Barnsdall "A"	25	22⅞	24	26½	22⅛	35½	20¾	32½	23½
California Petroleum, com.	25	25⅞	26	26⅞	24	32⅞	20	38⅝	30⅞
Houston Oil	100	147½	135	156⅛	127	175¾	60⅛	75	50⅛
Independent Oil & Gas	..	25⅝	25⅞	28½	21¾	32¾	17⅝	34	20¼
Louisiana Oil	10	9⅞	10	12¾	9⅝	18⅛	10½	19⅝	12
Maracaibo	..	14½	15⅝	18⅛	12½	22¾	12	27⅝	18⅜
Marland	..	35¼	35½	38⅝	33	58¼	31	63⅝	41¼
Mid-Continent Petroleum	..	26⅛	27½	29½	25⅛	39⅝	25½	41	25⅝
National Supply	50	95	92⅝	96½	89¼	95¾	76	84⅜	55½
Oil Well Supply	25	34	35	41	33	44⅜	31½	36	30
Pan American, B	50	43	42¼	46⅝	37⅝	66⅜	45⅛	72⅝	56⅛
Pan American, Western B	..	20	20	21	18¼	37⅞	16⅜	46	34
Phillips Petroleum	..	39	39	43⅛	35¼	60½	36½	54⅞	42¼
Producers & Refiners	50	20⅛	19½	26	16	33¾	16¾	26	11
Pure Oil, com.	..	21⅞	22	27½	19	33⅛	25	31	26⅜
Royal Dutch, N. Y., sh.	13.40	46	46	48⅝	44⅝	54⅛	44¼	57⅜	49⅜
Shell Transport	10	*42	42⅜	42⅞	39⅝	49	41⅛	48⅞	42
Shell Union, com.	..	25⅜	25⅜	26⅞	23¼	31⅝	24⅝	30⅞	24
Simms Petroleum	10	19⅞	20⅜	24⅝	18	23⅞	14¼	25⅝	16½
Sinclair Consolidated	..	24⅛	21⅛	25¼	17⅛	22⅜	15⅛	24⅛	16⅜
Skelly Oil	25	26⅜	26	28¼	25	37⅜	24⅛	37⅛	27
Standard of California	25	55⅞	55	56⅝	53	60⅜	50⅜	63½	54
Standard of New Jersey, com.	25	39	39¼	40¼	37⅝	41⅝	35½	46⅝	37½
Standard of New York	25	30⅝	29⅝	31⅝	28⅜	34½	29⅝	47¼	30⅝
Sun Oil Co.	..	40⅝	41	42⅜	31½	34⅞	30	41¼	30¼
The Texas Company	25	51⅜	51½	55⅜	50	58	45	58	48
Texas Pacific Coal & Oil	10	12⅜	12½	17	12⅛	18⅞	12	19½	12⅜
Tide Water Associated	..	15	15⅝	17⅛	14⅜	19⅛	15⅜	21	17
Transcontinental	..	8⅛	8⅛	10⅛	7⅛	10⅜	3⅜	5½	3
Union Oil of California	25	50	46⅝	51	42⅜	56⅛	39⅝	53⅜	37¼
Union Tank, com.	100	120½	124	125	119¼	126	94	120⅝	84¼
White Eagle Oil & Refining	..	*20¼	21	24⅛	20¼	27½	21⅜	29⅜	25⅛
Standard Oils									
Anglo-American Oil	£1	*20⅛	*20⅝	22⅜	18½	21⅝	17½	19⅜	16½
Borne Scrymser	25	*49	*49	56	50	69	49½	75	65
Buckeye Pipe Line	50	*64½	*63⅜	67	58	59	45	69½	42
Chesebrough Manufacturing Co.	25	*135	130	149⅝	117½	126	76½	81¼	63
Continental	10	16⅞	17⅝	23	16	22⅝	16¼	25⅝	10¼
Cumberland Pipe Line	100	*98	*88	105	89	‡137	90	137	102
Eureka Pipe Line	100	*70	*70	72⅜	64½	66	47	43⅜	43
Galena Signal, com.	100	*6⅜	8	6¾	5	13½	4⅜	32½	9⅜
Humble Oil & Refining Co.	25	62½	63⅛	68	58½	67⅝	54	99⅝	52
Illinois Pipe Line	100	200	201	206	176½	181½	123⅜	144	131
Imperial Oil	..	58⅜	59	65¼	56⅞	64⅜	37⅜	39⅜	32¼
Indiana Pipe Line	50	84	81⅜	84⅜	75	92	61	68	52¼
International Petroleum Co.	10	36⅞	37	43	35	36⅜	28¼	35½	28⅜
National Transit Co.	12.50	28⅜	27½	28¼	20½	23¼	13½	30⅜	27¼
New York Transit	100	*54	*53½	54	38½	42	31¼	61½	27¼
Northern Pipe Line	100	*112	*114	103	94	96	70	80½	64
Ohio Oil Co.	25	*59½	60⅜	66½	58½	66	52	67⅝	55⅜
Penn-Mex Fuel	25	*38	*39½	44⅜	33	36⅛	12	24¼	15
Prairie Oil & Gas	25	*48⅜	49	50¼	47⅝	55½	45⅝	60¼	49
Prairie Pipe Line	100	215¼	207	224	184	189¼	132	137⅛	122½
Solar Refining Co.	100	*174	*176	178	175	‡201½	178	212	184½
South Penn Oil	25	*38	*38½	40⅛	36⅜	41½	34½	50	30
Southwest Pa. Line	100	*86	*98	88⅜	70	78	55½	56	47½
Southern Pipe Line	50	*29	*29	33½	21	39	18½	27	34
Standard of Indiana	25	73¼	73⅜	80½	71½	80¼	64⅝	70½	60½
Standard of Kansas	25	15⅝	*16½	17	15	20⅞	15⅝	36½	26½
Standard of Kentucky	25	125½	128½	133	124	125½	111½	134⅜	107
Standard of Nebraska	25	41⅛	*41¼	43	40½	49½	43	51⅛	42
Standard of Ohio, com.	100	*71	*72½	79⅜	72	81½	72	362	192½
Swan & Finch, com.	25	*16	*16	17⅜	16½	21	11½	21	18
Vacuum Oil	25	143	141⅜	149	136⅜	147	95⅛	109⅜	94¼
Miscellaneous									
Gulf Oil Corp. of La.	25	106½	106⅞	117⅝	101⅜	116	86¼	95	82⅛

*Bid, no sales. ‡Old stock. †New stock. §Ex-dividend.
Quotations furnished by W. J. Wollman & Co.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb was as follows:

Mar. 19	62.79	Feb. 13	61.02	Jan. 9	63.55
Mar. 12	62.07	Feb. 6	62.03	Dec. 21	62.09
Mar. 5	62.56	Jan. 30	62.75	Dec. 27	62.56
Feb. 27	62.54	Jan. 23	63.49	Dec. 19	63.24
Feb. 20	60.77	Jan. 16	63.87	Dec. 12	62.07

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

WAX AND BASE OF LUBRICATING OIL

Does the wax in a high cold test lubricating oil raise the viscosity? Is a paraffin base stock lubricating oil better than asphalt base oil?—J. A. McM.

The amorphous wax in a high cold test lubricating oil has a tendency to give a false viscosity when the test is made at low temperatures; however, as wax is considered to be lacking in viscosity, being approximately 35 Saybolt at 210 F. for the 125 melting point wax, it may be without influence when the viscosity is reported at this higher temperature.

The relative value of paraffin base lubricating oils and asphaltic oils has provided a subject for much discussion. It is not so much the base of the oil that has to do with its lubricating value as the degree of refining and the use to which the oil is put. The paraffin wax should be removed from the paraffin base oils if a high quality lubricating oil is to be made, so if the distilling and pressing operations are not well conducted proper separation will not be obtained. The quality of the final product is dependent upon the type of distillation. Special stills and towers may permit the oil to be taken off at a comparatively low temperature, making it possible to obtain the desired separation at lower temperature than when steam alone is used in an ordinary shell still, and as the temperature is low, there is not so much decomposition.

The filtering through fuller's earth or contacting with special clays, is an important step which has considerable influence on the quality of both types. The combined acid treatment and filtering determine the extent to which impurities are removed. When these are carried to the highest degree a colorless oil is produced. Excellent treatment in this respect is desirable when a nonmulsifying oil is needed for use in lubricating systems where the oil is brought in contact with steam or water.

Some authorities claim that there is a difference in the performance of paraffin base and asphaltic base lubricating oils when they are used for the lubrication of internal combustion engines and especially in automobile engine cylinders. The paraffin base oils form a very hard deposit on the cylinders which is difficult to remove and causes damage to the cylinder walls. The asphaltic oil deposits a much softer material which does not scratch to the same extent and is quite easy to remove.

It should be noted that the paraffin oils do not possess their lubricating values from true paraffin hydrocarbons, with the possible exception of the very low viscosity oils, because the viscous oils are largely composed of naphthenes and olefines. These hydrocarbons are present in large quantities in oils of a quite different character.

FORMATION OF PETROLEUM

A suggestion has been made that petroleum may now be in process of formation through the influence of radium minerals. Have you a reference on this? —A. G. H.

This appears to be a reference to the discussion which is said to have originated in Germany and is treated in an article by Wilhelm Gaedicke, as reported by The Petroleum Times, October 22, 1927, in Allgemeine Osterr. Chem. und Tech. Zeit., September 1, under the title of "Considerations Regarding the Origin of Mineral Fats." In this article he attempts to prove that the heat developed in connection with oil pools raising the temperature of the overlying strata is a "low-temperature" combustion, the decomposition of radium and the rays or emanations which result therefrom. He calls attention to the well-known fact that most petroleum gases contain more or less helium, which is a decomposition product of radium, and that all crude petroleums in situ show relatively high radioactivity.

Gaedicke's explanation of the increase in temperature observed in the strata overlying oil sands as compared with average conditions are as follows: As direct causes are the beta and gamma rays resulting from the decomposition of radium, or more correctly, uranium. A crude oil deposit is radioactive and even sends out rays into the atmosphere.

He says that the gamma rays emitted by radium, which are the most important, are able to decompose water and thus produce free hydrogen; goes to the formation of hydrocarbons by the direct combination with carbon. The source of the carbon may be the mineral coal, but is more probably the carbon in plant and animal organisms. He thinks that in the "woody" masses the heavier hydrocarbons are formed chiefly, but where carbonaceous material is in a form more accessible to water as in peat and humus formations, methane is the chief hydrocarbon formed as in "marsh gas." The formula of methane (CH_4) shows that quantitatively a great quantity of hydrogen must be available for its formation.

The heavy tar oil of Wietze, Hanover, which in part comes to the surface, doubtless finds its way through the sandstone pores, but it is formed where sufficient radioactivity prevails in order to bring about a combination of carbon and hydrogen. These materials as elements, or as primitive fatty gases (CH_4, C_2H_2, C_2H_4, etc.), are absolutely necessary, and the "chemical workshop" can be active even today.

Gaedicke attempts to focus his views into a single sentence as follows: "Where the radioactivity, observed everywhere in surface rocks, is relatively strong and carbon is present, there is always oil formed, due to the decompositoin of water by the action of the rays from the decay of uranium which are known and, perhaps, some that are still unknown."

TREATING WITH LIME-WATER

I am using 15 degree caustic solution with sodium plumbite for treating gasoline. The management wants me to use lime-water instead. What is your opinion of the relative merits of these two methods and which is the cheaper?—M. L. B.

Lime-water is used to some extent for treating the lighter fractions which are obtained from certain crude oils. The nature of the sulphur compounds present has much to do with the successful use of lime. It has been found satisfactory for distillates which contain large quantities of hydrogen sulphide. When used in this manner it may serve in place of the weak alkaline solution of caustic soda, applied as a preliminary wash before the use of the doctor solution. We do not know of any case where lime-water has entirely replaced the doctor treatment. When hydrogen sulphide is removed by water or lime water there will of course be a saving in the doctor solution because less lead will be precipitated. Lime-water does not cost as much as the doctor solution or a weak solution of caustic soda.

There are some objections to the use of lime-water. When lime is combined with certain of the hydrocarbons colored substances are formed which are not removed by the subsequent treatment with the doctor solution. Frequently large quantities of lime are necessary and the contact time has to be much longer than when caustic soda is applied for the washing. There is also a peculiar action on some oils, which is the tendency to produce emulsions which are difficult to break; there being no separation on standing even after several days.

The choice of these solutions for your particular product should be made after adequate laboratory investigation has demonstrated the respective merits and an indication of the cost.

WHAT MAKES GASOLINE KNOCK

I have seen several explanations for the knocking of gasoline in the motor, but these are not along the same line and I want to ask if there is not some generally accepted idea about it?—S. O. E.

It is true that numerous attempts have been made to explain just why some gasolines knock in the motor and others do not. Considerable progress has been made within this field during the last year, as indicated in the reports of research before the different technical societies. The subject is too complicated for anything like a thorough discussion here; however, the summary of recent work, as reported by H. Y. V. Jackson, Motor Spirit, with Special Reference to Its Use in Internal Combustion Engines, in the Journal of the Institution of Petroleum Technologists, page 869, vol. 13, December, 1927, may give what you want.

"Due to imperfections in the vaporizing qualities of an ordinary carburetor, the heavier ends of a petroleum spirit (gasoline) remain in suspension as very fine drops in the mixture during compression. As the temperature of the mixture rises, due to compression, incipient oxidation (i.e., combustion) commences, the lighter ends of the spirit which are in the form of a vapor being consumed first. One of the results of the addition of the oxygen molecule to the hydrocarbon is the formation of alkyl peroxides which decompose into aldehydes and water. These peroxides are produced in greater quantities with a detonating fuel, such as hexane, than with a nondetonating fuel, such as benzol. They are unstable compounds and detonate more or less violently when heated. They have been definitely isolated from the products of combustion resulting from the slow oxidation of the detonating fuels. Further, an addition of these peroxides to a nondetonating fuel will cause it to detonate.

On the up stroke of the piston the mixture is compressed, and shortly a temperature is reached when slow oxidation commences. Unstable peroxides tend to be formed, and as compression increases these are absorbed by the layers of pure unconsumed vapors in the immediate vicinity of the drops and finally condensed with them into the drops. If no drops are present to absorb the peroxides they decompose as quickly as formed, producing aldehydes and water. A further rise in temperature due to further compression and the heat of combustion from the intermixed burning vapor causes these peroxides to detonate. Each drop then becomes the center of a minute explosion, the drop is disintegrated and vaporized, and combustion of the whole mixture is completed. It is the summation of these minute explosions which produces the metallic knock in the engine.

The action of dopes is that they naturally concentrate in the nuclear drops referred to above, decompose, and deposit metal. These metallic deposits apparently prevent the absorption of the peroxides so that the latter cannot form so easily. Experimental undoped mixture produced aldehydes and water as products of combustion, being the results of the decomposition of the peroxides formed, while the doped mixture produced practically no aldehydes and water.

INCREASED MILEAGE WITH ANTI-KNOCK GASOLINE

Is there any foundation for the statement that an antiknock gasoline will give greater distance per gallon than a gasoline of the ordinary grade, say regular U. S. Motor gasoline?—O. R. C.

A true antiknock gasoline may have a distillation range and other properties so that it may meet all specifications of U. S. Motor gasoline, but we shall assume that the product intended is one of low knock rating as compared with one of high knock value.

The influence of a good antiknock gasoline on mileage was mentioned by A. L. Clayden in The Oil and Gas Journal, September 1, 1927, page 122. He said: "A point which is often lost sight of is that the antiknock fuel is of distinct advantage in existing engines. In a rather hilly city a large taxicab organization recently made a 30-day trial of two gasolines, both approximating government specification while differing mainly in their detonating characteristics. Two groups of 25 cabs each were set aside for this test, and no carbureter, spark, or other adjustments were made. The performance of the individual cabs differed considerably, but the final results appear as follows:

Gasoline used—	Ordinary	Antiknock
Total cab miles	59,900.1	62,917.5
Total gaso. consump.	6,370.5	5,784.5
Miles per gallon	9.554	10.876

"These figures show an advantage of 13.81 per cent in consumption with the antiknock fuel. This is undoubtedly more than ordinarily would be noticed in a passenger car, but it is particularly significant, because the test was made during the winter, when the amount of idle engine running was great and traffic conditions were extremely heavy."

GULF COAST FIELDS

(Continued from Page 123)

Cooper was being bailed for a test at 4,228 feet as the week closed.

Goose Creek—Harris County

Butler & Perryman have a rig up to deepen No. 4 Bryan. Gulf Production Co.'s No. 16-A Tabb also is to be deepened after failing to make a well at 3,060 feet. The latter company's No. 19 Hoffman-Gaillard is drilling at 3,307 feet. Humble Oil & Refining Co. is preparing to deepen its No. 73 Simms-Smith. This test has been standing the past week at 5,288 feet where it was tested without finding anything. This test has turned out to be a geological test. Humble's No. 10 Sweet has screen set at 2,626 feet and is being washed.

Spindletop—Jefferson County

Three new wells were reported at Spindletop during the week. Two were Yount Lee Oil Co.'s Nos. 56 and 57 McFaddin, the former flowing 1,600 bbls. of pipe line oil through a half-inch choke from sand at 4,684 feet and the latter 1,433 bbls. through a five-eighths inch choke from sand at 3,106 feet. Gulf Production Co. got a shallow pumper in its No. 230 Gladys making 35 bbls. from 815 feet. Gulf's No. 13 Oakwood is drilling at 5,050 feet; its No. 12-A Weed at 5,370 feet; its No. 13-A Weed at 4,720 feet, and its No. 19 McLean at 2,410 feet. Rio Bravo Oil Co.'s No. 54 T.&N. O. is washing at 4,417 feet. Sun Oil Co.'s No. 20 McLean is drilling at 5,445 feet, and No. 1 Prather at 2,760 feet. The latter is on the east side of the dome. The Texas Company's No. 1 Gladys City is down 2,848 feet. Traders Oil Corp.'s No. 1 Cissell, north of Spindletop, is drilling at 3,825 feet. Battleship Oil Co.'s No. 3 Parker on the northeast flank is down 3,430 feet.

Hull—Liberty County

Empire Gas & Fuel Co.'s No. 28 Barngrover is drilling at 2,815 feet. Gulf Production Co.'s No. 40 Phoenix is beng bailed for a test of sand at 3,300 feet. Gulf has a rig up for No. 90. Mecom Oil Co.'s No. 4 Taylor is drilling below 4,045 feet. Republic Production Co.'s No. 7 Dolbear is down 2,854 feet where strainer has been set for a test. The Texas Company and Vacuum Oil Co.'s No 7 Hannah is mixing mud. The hole is at a depth of 4,842 feet.

High Island—Galveston County

Gulf Production Co.'s No. 2-A Smith is drilling at 2,950 feet. A rig is up for No. 1 League. McLean Oil Co. has set strainer for a test of a sand around 3,345 feet in No. 6 Cade. This company has a rig up for No. 12 Cade and has a location for No. 13 Cade.

Orange—Orange County

Gulf Production Co.'s No. 6 Chessom, an old well drilled deeper to 3,504 feet, put on the pump but was pumped dry. Rex Petroleum Co. also has a well to be put on the pump after deepening to 3,152 feet. Rycade Oil Corp's o. 11-B State in Cow Bayou quit flowing during the week and it is also being put on the pump. The latter company's No. 13-E State in Cow Bayou is drilling in gumbo, shale and lime at 4,991 feet. Sun Oil Co.'s No. 2 Brown is drilling at 5,052 feet. Atlantic Oil Producing Co.'s No. 3 Hager is drilling at 3,425 feet, and Gulf Production Co.'s No. 2-A Kishi Lang is swabbing at 3,190 feet. Supreme Oil Co. has a rig up to deepen its No. 2 Jackson, as has the Tilleray Oil Co. at No. 3 Tasco The latter company has a new test, No. 4 State.

Boling—Wharton-Fort Bend Counties

Four tests, not previously reported, were abandoned at Boling on the Wharton County side earlier in the month. These are: Texas Gulf Sulphur Co.'s No. 2 Plachy, 845 feet, gyp rock. Same company's No. 2 McCarson heirs, 780 feet, gyp rock; same company's No. 7 Banker, 1,248 feet, gyp rock, and Patterson & Hyde's No. 2 Bay, 445 feet, gumbo. Sun Oil Co.'s No. 7 (H.R.) Farmer, Fort Bend County, 1,470 feet, gyp; Hyde Production Co.'s No. 1 Fotjeck at Boling is drilling around 3,300 feet.

West Columbia—Brazoria County

Gulf Production Co.'s No. 1 Tom Hogg is pulling liner to deepen. The Texas Company's No. 52 Hogg is down 3,160 feet. Both are old wells being deepened.

Moores Field—Fort Bend County

Gulf Production Co.'s No. 15 Moore is drilling at 3,470 feet.

Markham—Matagorda County

Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 1 Hudson is reaming at 3,736 feet. These operators' No. 3 Meyers is to be deepened. Amsher & Bess found a sand showing oil at 1,832 feet, which it is thought would have made a small pumper, but the hole is being deepened.

SOUTH LOUISIANA FIELDS

Jennings—Acadia Parish

E. L. Myers' No. 2 Arnandet found a sand showing oil at 1,502 feet and the well is to be put on a pump. This is an old well deepened. Yount Lee Oil Co. has started a new test, the No. 3 Housierre-Latrielle, Section 47-9s-2w. No. 2 was abandoned earlier in the month at 3,740 feet.

Edgerly—Calcasieu Parish

Green Oil Co.'s No. 9 Moore has been put on the pump as good for approximately 75 bbls. net oil from sand around 3,200 feet. Wilson-Broach's No. 3 Wilson has strainer set for a test of a sand around 3,445 feet. W. T. Burton is rigging up for No. 1 Koonce. Rex Petroleum Co.'s No. 8 Hunter is drilling at 3,610 feet.

Lockport—Calcasieu Parish

Vacuum Oil Co. and Gulf Refining Co.'s No. 1-A fee is drilling blue shale at 5,798 feet. These operators' No. 6 Bordages is in red shale at 3,040 feet. No. 1 Calcasieu River is in hard, sandy shale at 2,427 feet. No. 5 Lock-Moore had 13⅜-inch surface casing cemented at 1,247 feet but plug has been drilled and the test now is going deeper. No. 1 State in Bayou D'Inde has been rigged up to deepen. This test formerly was completed at 3,764 feet.

Vinton—Calcasieu Parish

Edgerly Petroleum Co.'s No. 11 Vincent is drilling below 3,200 feet in a sidetracked hole. Marrs McLean's No. 1 G. &N.G. is being deepened after testing salt water at 2,240 feet. It is drilling below 2,250 feet. Vinton Petroleum Co.'s No. 62 Gray is drilling around 1,200 feet.

Starks—Calcasieu Parish

Gulf Refining Co.'s No. 10 Industrial is drilling at 3,940 feet.

Sulphur—Calcasieu Parish

Union Sulphur Co.'s No. 723 fee has been rigged up and now is starting drilling. No. 724 is down around 2,420 feet while No. 722 has been coring around 3,400 feet. In the latter 6⅝-inch casing has been set at 3,299 feet.

UPWARD TENDENCY IN CHICAGO MARKET

(Continued from Page 127)

the demand from residents of the States and from transients is so widespread and insistent that we may look for a steady increase in the mileage of hard roads and with it a growing use of the motor car in all except the most extreme weather. Even heavy snows only temporarily block these roads. The increased consumption of motor fuels and oils per car is also traceable to these good roads for the roads make possible the daily trips of the motor buses and freight transfers. The result is that instead of the gasoline consumption per car holding steady or even decreasing as might have been the case from the new motors, the consumption is steadily rising and there is more and more business coming to the dealer in gasoline and oils.

But doing business is one thing, making a profit is another and in the long run it is the profits that make the business. Selling at a small or no profit price the concern is cramped in its business methods. It has no funds with which to go out for business but has to wait for the buyer to come to them. Its sales costs must be cut to a minimum.

Little Price Cutting

There has been a steady progress made in doing away with the cut prices over the territory. These sections where the price asked for the major products is below normal are few and small. During last week the kerosene prices in Illinois which were badly cut over many parts of the State have been restored to normal. There is now some profit in handling kerosene at these points. A good grade of kerosene can be delivered at 6½ to 6¾ cents at today's market. With a tank wagon price of 9 cents or less there was no money in the sale of kerosene. With a normal price of 12.3 cents, which would be about the average, there is a liberal profit.

In the face of overwhelming evidence that the station business is so badly overdone, the construction of new stations is going on at a good rate. This is not the very best season for new stations but the list of stations building or planned to be built is large. Each one has some reason for the plan. In many cases the new stations are due to rivalry between the large concerns for what they consider their share of the business of a town or city. In some cases refiners are installing stations where they previously had an outlet through local distributors which they have lost for one reason or another. There are all sorts of reasons for the building of stations. Millions of dollars are tied up in stations where it does not now and may never earn a dollar for the owners. In some events the station site may advance in value. It has been said of some of the larger oil companies that they were not in the oil but in the real estate business. It is this excess of stations that provokes many of the cuts in price. In any business success is very largely up to the individual. One of the early successful oil jobbers once said that any fool could make money in the jobbing business. Those days have passed.

PANHANDLE FIELDS

(Continued from Page 40)

and abandoned at 1,407 feet. Rose and others' No. 1 Farmer was dry and abandoned at 1,550 feet. Sun Oil Co.'s No. 18 Farmer was dry and abandoned at 1,475 feet. The Texas Company and others' No. 1 Graham was dry and abandoned at 1,256 feet.

Foard County

Fain-McGaha Oil Corp. and others' No. 2 Matthews was drilled to the total depth of 980 feet and made 2,000,000 feet of gas, 355 pounds rock pressure, at 850-925 feet.

Jack County

Shaw Oil Co.'s No. 8 Cullers and others made 60 bbls. at 1,987-94 feet. Fletcher Royalty & Drilling Co.'s No. 1 Johnson has been temporarily abandoned at 2,504 feet. Marland & Zoch's No. 1 Cherry Holmes-A was dry and abandoned at 2,519 feet.

Montague County

R. I. Carter's No. 2 Bouldin made 25 bbls. at 799 to 815½ feet. Carter & Rycade Corp.'s No. 7 Cunningham and others made 32 bbls. at 918-34 feet. Oil Operators Trust Co.'s No. 5 Bouldin made 31 bbls. at 818-41 feet. Pure Oil Co.'s No. 3 Keck made 55 bbls. at 797 to 821 feet. Same company's No. 7 Maddox-A made 57 bbls. at 879-918 feet.

Wichita County

W. B. Omohundro's No. 1 Chilson made 15 bbls. at 740-54 feet. The following wells were dry and abandoned: C. E. Burk and others' No. 1 Dutton at 1,851 feet; Maxwell Newton's No. 1 Chilson at 709 feet; E. J. Stump & Co.'s No. 1 Chilson-S at 1,853 feet; Bridwell & Mayfield's No. 1 Sparks at 2,000 feet.

Wilbarger County

Barkley & Meadows' No. 2 Waggoner-A made 125 bbls. at 1,448-60 feet. Petroleum Producers Co.'s No. 4 Waggoner-A was shut with 10 quarts at 2,378-82 feet and made 10 bbls. The Texas Company's No. 3 Waggoner-B made 146 bbls. at 2,371-91 feet. Same company's No. 1 Waggoner-D made 145 bbls. at 2,356-75 feet. Same company's No. 2 Waggoner-E made 700,000 feet of gas at 692-722 feet. Murchison Oil Co.'s No. 1 Waggoner-C was dry and abandoned at 1,604 feet. Muse and others have abandoned their No. 1 Waggoner location.

Young County

Allday Oil Corp. and Carter's No. 2 McKinley made 135 bbls. at 502-26 feet. Cunningham's No. 2 Hawkins made 125 bbls. at 502-15 feet. Cunningham's No. 3 Hawkins made 175 bbls. at 502-27½ feet. Pennell Oil Co.'s No. 2 Boone made 280 bbls. at 510-31 feet. Riggs and others' No. 1 McKinley made 125 bbls. at 506-26 feet. Godley Oil Co.'s No. 2-A Graham made 40 bbls. at 3,350-60 feet. Gross and others' No. 1 Hinson made 20 bbls. at 1,883-1,900 feet. Montary Oil Co.'s No. 1 Boozer made 50 bbls. at 3,081-95 feet. Nash & Windfohr's No. 4 Hinson made 25 bbls. of oil and 10 bbls. of water at 2,150-60 feet. Paull Oil Co.'s No. 2 Mathis was drilled to a total depth of 2,412 feet with no production and was plugged back to 2,184 feet. The well is making 25 bbls. at 2,156-67 feet. Tidwell's No. 1 Costello-C was shot with 60 quarts at 2,762-91 feet and flowed 335 bbls.

The following wells were dry and abandoned: Allday Oil Corp.'s No. 5 Johnson at 610 feet; Parker and others' No. 1 Johnson at 670 feet; Pennell Oil Co.'s No. 1 Boyd at 600 feet; Godley Oil Co.'s No. 3-A at 2,165 feet.

RANGER DISTRICT COMPLETIONS
Week Ending March 17, 1928

Brown County

Charter Oil Co.'s No. 4 Byler found the pay at 1,322-24 feet and made 45 bbls. Henshaws Oil Corp.'s No. 1 Bush was shot with 7 quarts at 1,110-21 feet and made 275 bbls. Same company's No. 2 Bush made 250 bbls. at 1,090-1,101 feet. Humble Oil & Refining Co.'s No. 11 Gilbreath was shot with 3 quarts at 1,292-99 feet and had an initial production of 1 bbl. Scrivenor and others' No. 1 Curry was shot with 35 quarts at 1,110-28 feet and made 50 bbls. Duffield & Howard Petroleum Co.'s No. 1 Cox was dry and abandoned at 1,745 feet. Williamson and others' No. 2 Eddington was dry and abandoned at 1,268 feet.

Coleman County

Dallas Petroleum Co.'s No. 1 Wilson made 15 bbls. after a 45-quart shot at 1,014-40 feet. Kingwood Oil Co.'s No. 1 Shary was dry and abandoned at 1,595 feet.

Eastland County

Barkley and others' No. 3 Duffer found the pay at 2,983-3,003 feet and made 2,000,000 feet of gas and 10 bbls. of oil. Schimmel Producing Corp.'s No. 1 Hamilton made 10 bbls. at 3,112-30 feet. Four tests were dry and abandoned as follows: Chestnut & Smith's No. 1 Duffer at 3,365 feet; Schimmel Producing Corp.'s No. 1 Earnest at 1,600 feet; Cranfill & Reynolds' No. 1 Tate at 1,445 feet and P. Hoffman's No. 1 Stewart at 3,115 feet.

Shackelford County

Roeser & Pendleton, Inc.'s No. 31-B-60 Cook made 40 bbls. at 1,341-49 feet.

GULF COAST MARKETS SHOW LITTLE CHANGE

HOUSTON, Tex., Mar. 20.—Gulf Coast refinery markets reflected very little change the past week and movements were only steady, but prospects for new business were indicated Monday and Tuesday upon receipt of inquiries for a substantial quantity of material for April and May deliveries. An inquiry for 1,500 tons of 100 viscosity pale neutral was received from a marketer and a request for quotations on a 50,000-bbl. lot of oil was made by another. Several other small inquiries for domestic movement also were reported. While inquiries still come in for the lighter viscosity oils the principal business now is shifting to the heavier oils. Northern buyers are reported as having some hangover light oil in stock and to blend this up for spring and summer requirements are buying heavy oils as long as needed. However, very little 200 and 300 viscosity oils are being made here now which accounts for the fact that no weakening has been reflected in these grades.

Fuel oils are the weakest products on the Gulf Coast market. Practically the only outlet now is for bunkering. Bunker C oil now is quoted freely around $1.20 and sales as low as $1.15 are reported. Natural gas virtually has replaced industrial fuel demand. Gas oil is unchanged as practically all of this is being cracked, leaving little to find its way into the open market.

OIL AND GAS ENRICHED OSAGES OVER $214,000,000 IN 27 YEARS

The Osage Indians, whose hunting ground is Osage County, Oklahoma, and whose favorite game is oil men, have profited to the amount of $214,354,678.74 from the efforts of the oil industry to develop their reservation. There are 2,229 head rights in the Osage Nation, therefore every headright has profited on an average of $96,166.34 in the past 27 years. As some of the Osages own a number of head rights by inheritance it may be seen that there are some pretty rich Indians among them, and none of them is poor. It is said that the valuation put upon a head right at this time is in the neighborhood of $125,000, so it is very evident that the golden shower is expected to last for many years.

A remarkable point about the wealth that has come to the Indians is that they have received almost as much in bonuses as they have in royalties from oil, gas and gasoline. The sales of Indian lands which have been conducted from time to time since 1912 have brought them total of $107,149,229.84 of which $1,173,920.48 is from purely gas leases and the bulk or $105,975,309.36 is from oil leases alone and $537,618.58 from oil and gas leases. The royalties from crude oil, gas and gasoline (casinghead), up to the close of the 1927 fiscal year were $107,205,448.90.

In no other field in the world have oil companies paid such big bonus prices as in Osage County, where leases are auctioned to the highest bidders. All sorts of prices from a few dollars up to $1,995,000 have been paid for the privilege of drilling on 160-acre tracts in that county and since 1912 the average bonus price has been $145.07 per acre for wildcat and semiwildcat leases. Some wonderful bargains have been picked up at the sales, while on the other hand millions have been sacrificed because the tracts purchased did not produce more than a small part of the oil expected.

The largest year's production in the county occurred in the 12 months ending June 30, 1923, when the gross output was 41,810,178 bbls. and that year also was a record year for royalties, the Indians having been paid $14,072,541.61 for their share of the returns for oil, gas and casinghead gasoline. In the calendar year 1923 the Indians received $14,246,000 in oil bonuses alone and in 1924 they received $17,530,800 in oil bonuses while their royalties from all oil and gas sources in that fiscal year were $11,879,496.15.

The lease sale held March 18 and 19, 1924, when 50,982.24 acres were sold for $14,193,300, was the largest sale of acreage and yielded the largest amount of bonus money, but the average price per acre, $278 40, was exceeded at some other sales. Back in 1916 $1,169,280.78 was realized by the sale of 2,482 acres, an average of $471.10 per acre, which was the top average. In 1912, 24,541 acres went for $39,436, an average of $1.60 per acre.

The next sale of leases will be held in Pawhuska on Wednesday and Thursday, March 28 and 29, at which several tracts are expected to command good prices and two in the Burbank area are expected to result in hot competition among the oil companies and big money for the red men.

The accompanying tables are interesting. They were made up in the Office of Indian Affairs, Department of the Interior.

SHAFFER OIL FINANCING

CHICAGO, Mar. 15.—The Shaffer Oil & Refining Co., has issued $10,000,000 in convertible gold notes due in five years and bearing 6 per cent interest. They were placed on the market at 98½ to yield 6.35 per cent. A feature of the notes is the provision which permits the owner of a note to exchange it for two shares of the common stock of the company, the stock having a face value of $100 per share. The purpose of this note issue is to retire funded indebtedness amounting to $13,593,700.

OSAGE OIL LEASE SALES AND BONUSES

Date of Sale—	Acres Offered	Acres Sold	Bonus Offered	Ave. per Acre
November 11, 1912	107,594	24,541	$39,436.00	$1.60
September 29, 1913	12,049	10,132	498,182.58	49.17
April 20, 1916	17,280	14,377	2,057,600.00	143.11
June 20, 1916	3,020	2,482	1,169,280.78	471.10
May 31, 1917	9,120	8,160	1,947,600.00	238.67
November 12, 1917	20,621	19,869	1,677,200.00	84.42
February 14, 1918	32,160	25,440	1,275,500.00	50.14
May 18, 1918	51,400	38,890	1,180,575.00	30.29
November 9, 1918	43,040	34,720	3,350,200.00	96.49
March 5, 1919	21,000	20,020	2,790,925.00	136.01
June 6, 1919	39,251	38,451	3,884,925.00	101.04
October 6, 1919	35,310	34,670	6,056,950.00	174.70
February 3, 1920	31,613	29,533	3,102,700.00	105.05
May 18, 1920	31,783	31,303	2,851,900.00	91.10
October 12, 1920	36,877	36,877	3,993,750.00	108.30
June 14, 1921	26,588.7	25,918.7	4,559,160.00	175.90
December 12, 1921	36,414.4	35,665.1	7,261,600.00	203.60
March 2, 1922	37,184.2	33,467.5	3,949,950.00	118.02
June 28, 1922	34,660.15	33,220.15	10,889,700.00	327.80
January 18, 1923	33,913.88	24,071.24	6,217,500.00	256.29
April 5, 1923	33,790.34	23,640	8,029,100.00	339.64
March 18-19, 1924	100,305.38	50,982.24	14,193,300.00	278.40
June 30, 1924	19,785.41	11,145.41	2,250,200.00	201.89
December 18, 1924	29,889.73	8,609.73	1,087,300.00	126.00
March 18, 1925	35,237.98	12,205.07	671,650.00	55.03
March 17-18, 1926	113,392.04	46,331.45	3,998,485.00	86.30
September 30, 1926	35,780.72	15,520.00	2,117,300.00	136.42
March 28, 1927	74,564.31	20,656.16	2,435,700.00	117.92
December 12, 1927	20,000.00	19,040.00	2,437,700.00	128.03
Total	1,143,615.24	730,527.75	*$105,975,309.36	$145.07

*Divided $105,437,690.78 for oil leases and $537,618.58 for oil and gas leases. Purely gas lease bonuses total $1,173,920.48, making the total bonuses for oil and gas leases, $107,149,229.84. Authority: Office of Indian Affairs, Department of Interior.

OSAGE OIL AND GAS PRODUCTION AND ROYALTIES

Year ended June 30—	Gross Oil Production Barrels	Oil, Gas and Gasoline Royalties
1901	10,536	$603.25
1902	10,522	448.26
1903	52,217	2,957.71
1904	90,806	9,713.74
1905	1,868,260	128,897.12
1906	4,514,004	228,267.34
1907	5,547,167	301,580.48
1908	4,775,289	246,795.86
1909	4,816,462	248,013.53
1910	5,091,424	233,991.45
1911	9,418,769	517,691.21
1912	9,445,669	656,176.47
1913	7,787,030	778,300.22
1914	11,091,791	1,358,392.08
1915	7,257,788	524,252.52
1916	9,805,477	1,097,854.71
1917	9,943,919	3,417,815.95
1918	10,906,376	4,602,799.75
1919	12,138,086	5,420,674.71
1920	17,077,348	9,052,551.78
1921	20,621,614	11,308,746.20
1922	28,941,934	9,235,691.80
1923	41,810,178	14,072,541.61
1924	37,577,900	11,879,496.15
1925	33,662,179	11,144,492.63
1926	25,682,848	10,349,864.76
1927	25,884,734	10,386,837.61
Total	345,830,327	$107,205,448.90

DEMAND STRENGTHENS OKLAHOMA MARKET

(Continued from Page 29)

$1,756. Using present prices, the comparable revenue is $1.887. This shows an improvement of about 13 cents, but in the meantime Seminole crude prices were advanced, and a portion of this advantage is absorbed. The advance made on the 42 gravity oil amounted to 6 cents, so the net advantage gained from the better market prices is but 7 cents, and this does not make up for the loss still being shown by many operating plants. It is true, however, that the better gasoline prices have aided cracking operations to a greater degree, and there is a tendency for refiners to push cracking operations more than during the several months of the past. The comparative margins are shown in a table following.

RELATIVE REVENUES FROM REFINED OILS ON JANUARY 1 AND AT PRESENT USING SEMINOLE CRUDE AND AVERAGE YIELDS FROM SKIMMING AND CRACKING IN THE MID-CONTINENT AS A BASIS

Revenue From Refined Oils From 1 Bbl. of Seminole Crude

Prices January 1, 1928

Yield:	
54% gasoline @ .05¾	$1.304
7% kerosene @ .04¼	.125
2% lub oil (200 vis.) @ .09½	.080
33% fuel oil @ .75 per bbl.	.247
4% loss	...
Total	$1.756
Posted price Seminole crude (42-42.9 grav.)	1.400
Net revenue to pay for operation and overhead	$0.356

Prices March 19, 1928

Yield:	
54% gasoline @ .06¼	$1.418
7% kerosene @ .04¼	.125
2% lub oil (200 vis.) @ .09½	.080
33% fuel oil @ .80 per bbl.	.264
4% loss	...
Total	$1.887
Posted price Seminole crude (42-42.9 grav.)	1.460
Net revenue to pay for operation and overhead	$0.427

Gasoline and Naphthas

The increased movement of all grades gave the market a firm tone even though plenty of material was offered. The U. S. Motor grade was the most popular and relatively little of the higher gravity gasoline is being moved. The average prices as reported by the Oklahoma refiners follow by grades:

Grade—	Price Mar. 12	Price Mar. 19
58-60 U. S. Motor	.06268	.06417
60-62 437 endpoint	.06619	.06653
60-62 400 endpoint	.06875	.06900
64-66 375 endpoint	.07250	.07125

Kerosene and Distillates

Kerosene moved at a fair rate but there was no thought of increased prices. Production has been carried on at a high figure and stocks are beginning to show increases again at many plants. The better spring demand is expected to equalize this, however, and prices are expected to remain near their present level. Distillates moved very slowly from most centers but a few refiners who have specialized in that business continue to find a fair movement.

Natural Gasolines

The demand for natural gasoline has fallen short of the production and, rather than add to the already heavy stocks, manufacturers are offering liberal price concessions in order to move the material. March thus far has proven to be a very dull month and there is little promise of a change over the balance of the month. There is very little natural gasoline moving to the Gulf on the spot market and the local demand from refiners has not increased sufficiently to move the material being offered. The C grade was particularly weak, most of it selling at 3½ cents with further concessions expected in a few days.

Gas Oil and Fuel Oil

Marked stability is shown in the gas oil and fuel markets and the demand has more than taken care of production. Gas oil is hard to find in quantities at the market which has been set at 2½ cents and should the demand continue higher prices are almost sure to follow. The improved movement of fuel to steel manufacturers and automobile manufacturers has been responsible for the stable fuel market and many refiners are offering very little spot fuel.

Lubricating Oils and Wax

A slightly better movement to jobbers gave life to the lub market but the free offering of all grades by refiners showed there was little thought of better prices in the immediate future. Cylinder stock continued very weak and bright stocks showed only a fair movement despite the better movement of compounded oils.

Wax prices were firm and the demand has increased sufficiently to make possible another advance in price in the immediate future. The bulk of the buying is being done for domestic consumption and several refiners are finding a nice business being built up on tank car shipments in preference to barrel shipments.

FOREIGN MARKETS FOR OIL EQUIPMENT

(Continued from Page 28)

leum exploitational work done in these countries during the past five years.

An idea of the position occupied by the different general classes of machinery exports from the United States may be obtained from Table 2. It will be noted that the 1927 figure of $180,167,191 represents a gain of 15 per cent over the 1926 figure of $156,618,000.

Upward Movement

The upward movement in exports of oil-well machinery, which has continued through a period of years, was still operative in 1927, exports totaling $16,843,000, as compared with $15,306,000 in 1926. This gain becomes even more significant when it is remembered that 1926 was a record oil-well equipment year and showed a gain of more than 50 per cent over 1925.

It is not surprising that exports of mining machinery fell below those of the banner year 1926, as shipments for that period represented the unusual gain of 41 per cent over 1925 and were more than double those of 1922. Exports of this class of machinery totaled $13,186,000 in 1927, compared with $14,857,000 in 1926.

Another class of industrial machinery which did not follow the general upward trend was that of internal combustion engines (over 10 horsepower), which declined from $5,937,000 in 1926 to $4,522,000 in 1927.

Compressor Gains

Of particular interest to manufacturers of air compressors is the fact that the most consistent maker of trade gains in the miscellaneous machinery group has been the air compressor, which in 1927 accounted for a total export value of $5,873,000, as compared with $4,665,000 in 1926. The major portion of this trade was in compressors of over 25 cubic feet capacity, the exports of which were valued at $4,519,000 in 1927 as compared with $3,567,000 in 1926.

During the month of January, 1928, shipments of oil-well machinery and steam engines fell off about 50 per cent when compared with the same month of last year. Shipments of oil-well machinery fell from $1,978,000 to $985,000, representing a loss of $1,000,000. Well-drilling apparatus totaled $496,000, as compared with $973,000 in January, 1927, and other oil-well machinery declined from $1,005,000 to $489,000 during the same period. Little significance, however, can be taken from shipments for so short a period as one month, as these are not indicative of the general trend.

BIDS FOR OIL LEASES

The Commissioners of the Land Office of the State of Oklahoma will receive bids until 2 o'clock p.m., on March 27, 1928, for oil and gas leases on School and State lands as follows: Lincoln County—NE, Section 16-12n-5e; SE, Section 16-12n-5e; SW, Section 16-12n-5e. The Commissioners will receive bids until 2 o'clock p.m., on April 10, 1928, for leases as follows: Pawnee County—S half NW, Section 16-20n-9e; N half SW, Section 16-20n-9e; and S half SW, Section 16-20n-9e.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 38)

Scott & Dittman's No. 1 Miller, SW cor. NW NE Sec. 1, School Blk. 97 ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; shut down for casing 1,767 ft.

ECTOR COUNTY

Pennsylvania Drlg. Co.'s No. 1 W. E. Connell, C NE Sec. 7, Blk. B-16 ..... Location.
Shoup et al's No. 2 C. P. Davis, C Sec. 16, Blk. 42 ..... Material on ground.

EL PASO COUNTY

Ellsworth & Haunt's No. 1 McKinney & Jones ..... Location.

FISHER COUNTY

Cranfill & Reynold's No. 1 J. A. Young, Sec. 208, B.B. B.&C. Sur. ..... Top pay 3,106 ft.; drlg. 3,129 ft.
R. W. Raney's No. 2 Maberry, Sec. 56, Blk. 1, T.&P. Sur. ..... Show oil 3,023-27 ft.; drlg. 3,031 ft.
Sinclair Oil & Gas Co.'s No. 1 F. Steele, NW NE NE Sec. 72, Blk. 1, H.&T.C.R.R. Sur. ..... Rig.

FOARD COUNTY

Clark et al's No. 1 Atkins ..... Lime 1,580-1,930 ft.; show gas 1,885 ft.; shut down 3,502 ft.
Marland Oil Co.'s No. 1 J. H. Minnick, C NE Sec. 74, Blk. B, H.&T.C. Sur. ..... Spudded.

GARZA COUNTY

Emerald Oil Co.'s No. 1 Boren, NW NE Sec. 137, Blk 5.. Shut down 2,600 ft.
Emerald Oil Co.'s No. 3 Boren, C NW NE Sec. 137, Blk. 5 ..... Top salt 660 ft.; shut down repairs 2,425 ft.
Gulf Prod. Co.'s No. 1 E. P. Swenson-A, Sec. 67, Blk. 2, H.&G.N. Sur. ..... Top salt 495 ft.; top lime 2,075 ft.; half bailer sulphur water 4,835-45 ft.; 3,000 ft. water in hole; increase at 5,015 ft.; drlg. dark lime 5,040 ft.
Marland Oil Co.'s No. 1 B. F. Pippin, C NW Sec. 1,210, W. C. Young Sur. (3,750-ft. test) ..... Drlg. 360 ft.

GLASSCOCK COUNTY

Texon & Marland's No. 1 Settles ..... Set 10-in. 1,420 ft.; top lime 2,015 ft.; hole full sulphur water 2,710-50 ft.; 5-in. casing 3,210 ft.; drlg. 3,285 ft.
Josey & Finchbaugh's No. 1 S. R. Cox, 1,320 ft. W. of NE cor. and located on the N line of Sec. 29, Blk. 33, Twp. 4s, T.R.R.R. Sur. ..... Location.
Meriwether Oil Co.'s No. 1 L. S. McDowell, CNL Sec. 34, Blk. 34, T-2-S, T.P.R.R. Sur. ..... Drlg. 450 ft.
R. R. Penn's No. 1 Hughes & Johnson ..... Location.

HOWARD COUNTY

Bristow & Merrick's No. 5 A. J. Hooks, SE NW N half Sec. 140, Blk. 29, W.&N.W.R.R. Sur. ..... Rig and shut down.
F. H. E. Oil Co.'s No. 1 Dora Roberts, SW NE Sec. 136, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 1,940 ft.
F. H. E. Oil Co.'s No. 3 Dora Doberts-D, SE cor. S half NW Sec. 136, Blk. 29, W.&N.W. Sur. ..... Location.
F. H. E. Oil Co.'s No. 3 Dora Roberts-A, 1,170 ft. S and 1,210 ft. W NE cor. Sec. 156, Blk. 29, W.&N.W. ..... Drlg. 1,246 ft.
F. H. E. Oil Co.'s No. 4 Dora Roberts-A, 1,170 ft. S and 1,710 ft. S and 1,710 ft. W NE cor. Sec. 156, Blk. 29, W.&N.W. ..... Spudding and shut down.
Green O. & R. Co.'s No. 1 H. R. Clay, SE cor. Sec. 127, Blk. 29, W.&N.W. Sur. ..... Drlg. 805 ft.
Henshaw et al's No. 1 W. R. Settles, SW SE SW Sec. 135, Blk. 29 ..... Hole full sulphur water 1,335-50 ft.; show oil 2,250-65 ft.; drlg. 2,395 ft.
Lockhart et al's No. 2 Dora Roberts, Sec. 157, Blk. 29, W.&N.W. ..... Material on ground.
Magnolia Pet. Co.'s No. 7 Dora Roberts, SW NE SW Sec. 136, Blk. 29, W.&N.W. ..... Drlg. 130 ft.
Marland Oil Co.'s No. 1 Clay-E, NW NE SE Sec. 138, Blk. 29 ..... Pay 2,480-2,500 ft.; total depth 2,575 ft.; initial prod. 75 bbls. on pump; preparing to shoot.
Marland Oil Co.'s No. 1 Donnely Clay, Sec. 127, Blk. 29.... Location.
Marland Oil Co.'s No. 1 Richardson, C NW Sec. 12, Blk. 32, T.&P. Sur., T-1-S ..... Top salt 370 ft.; hole full salt water 2,235-2,300 ft.; hole full sulphur water 2,790-2,800 ft. and 3,010 ft.; pulling pipe to abandon 3,618 ft.
Mays, Nixon & Flowers' No. 1 W. J. Flowers ..... Little salt at 976-97 ft.; top salt 1,114 ft.; shut down 2,100 ft.
Merrick & Lamb's No. 4 H. R. Clay, CSL SE NE Sec. 126, Blk. 29, W.&N.W. ..... Location.
Miley and Marland Oil Co.'s No. 1 C. D. Read, C NW Sec. 12, Blk. 31, T.&P. Sur., T-1-N ..... Spudded and shut down 5 ft.
Owen & Sloan's No. 3 Dora Roberts, Sec. 136, Blk. 29 .... Total depth 1,332 ft.; top pay 1,322 ft.; shut in for storage; 40 bbls. in 18 hrs.
Owen & Sloan's No. 4 Dora Roberts, Sec. 136, Blk. 29.... Drlg. 30 ft.
Sprague Oil Co.'s No. 1 Dora Roberts ..... Spudded and shut down.
Sweeney et al's No. 3 Chalk, Sec. 124, Blk. 29 .. .. Location.
Sweeney et al's No. 4 Chalk, Sec. 124, Blk. 29 ..... Location.
Tate-Weekley & Tubbs' No. 3 Dora Roberts, NE cor. Sec. 156, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 1,840 ft.
Tate-Weekley & Tubbs' No. 4 Dora Roberts, Sec. 156, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 1,460 ft.
Texon O. & L. Co. and Marland Oil Co.'s No. 1 Mrs. Connaly, NE cor. Sec. 15, Blk. 33, T.&P. Sur., T-1-N.. Top salt 1,425 ft.; hole full salt water 1,760-1,800 ft.; show oil 3,065 ft.; hole full sulphur water 3,500-55 ft.; hole full water 3,925-50 ft.; show oil 4,125-36 ft.; preparing to plug 4,400 ft.
Texon O. & L. Co. and Marland Oil Co.'s No. 2 W. R. Settles ..... Shut down for storage; sand at 1,280-84 ft.; total depth 1,298 ft.
Texon & Marland's No. 2 W. R. Settles-A ..... Rig; drlg. water well.
Weekly Oil Corp. et al's No. 1 Dora Roberts, Sec. 156, Blk. 29 ..... Underreaming 6-in. casing 255 ft.

HUDSPETH COUNTY

American Land Co.'s No. 1 Lockhart and Roseborough, C SE Sec. 5, School Blk. 21 ..... Shut down 180 ft. (cor. depth); to start up soon.
Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, T.&P. Sur., T-6 ..... 1,000,000 ft. inflammable gas 1,130 ft.; drlg. black lime 1,700 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 ..... Run. casing to 845 ft.

IRION COUNTY

P. F. Hill's No. 1 Horney, 150 ft. S and 450 ft. W of NE cor. SW of Sec. 2, Blk. 3, H.&T.C. Sur. ..... Hole full water 720-40 ft.; top pay 1,270 ft.; 1,170 ft.; fluid in hole; ran bailer and bailer 9 bbls. live green oil from top of hole; didn't test for water; total depth 1,270 ft.; preparing to pump.
F. E. Webb et al's No. 1 J. M. Nutt ..... Drlg. 340 ft.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means ..... Shut down 2,600 ft.
Humble O. & R. Co.'s No. 2 Crecencio Flores, 1,130 ft. N and 850 ft. E of SW cor. Sec. 34, Blk. 58, T.&P. Sur., Twp. 8 ..... Drlg. 4,138 ft.

JONES COUNTY

Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands ..... Hole full water 2,770-80 ft.; cleaning out 2,790 ft.
Midwest Exploration Co.'s No. 1 Sarah L. Phillips, SW cor. Sec. 16, Blk. 19, T.P.R.R. Sur. ..... Spudding.
Phillips Petroleum Co.'s No. 5 Joe Winters, NE cor. NW Sec. 19, Blk. 19, T.&P.R.R. Sur. ..... Rig.
Phillips Pet. Co.'s No. 6 Joe Winters, NE NW NW NE Sec. 19, Blk. 19, T.&P. Sur. ..... Location.
Rhodes & Highers' No. 1 E. Howell, Sec. 20, Blk. 19, T.&P. Sur. ..... Drlg. 1,931 ft.
J. N. Sloan and others' No. 1 W. C. Bennett, NW cor. SW SE Sec. 42, Orphan Asylum Land ..... Spudded and shut down.
W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 ..... Shut down 1,740 ft.

KENT COUNTY

Marland and Texon's No. 1 Bilby ..... Top salt 610 ft.; drlg. 2,300 ft.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Moore ..... Fishing for bit 2,285 ft.
Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. S and 2,500 ft. W of NE cor. Sec. 31, Blk. 4 ..... Drlg. 3,840 ft.

LOVING COUNTY

Delaware Oil Co.'s No. 1 Lockhart & Ramsey ..... Top salt 780 ft.; drlg. 1,100 ft.
Lockhart Bros.' No. 2 fee, 330 ft., 3,630 ft. W SE cor. Sec. 85, Blk. 33, H.&T.C. Sur. ..... Location.
Lockhart & Co.'s No. 1-A Lepp, Sec. 85, Blk. 33 ..... Building rig.
Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 30, Blk. 53, T-2, T.&P. Sur., elev. 2,924 ..... Top salt 955 ft.; drlg. 4,465 ft.

LYNN COUNTY

Elpo Oil Co.'s No. 1 Nevola, NW cor. Sec. 6, Blk. C-42, School Lands ..... Drlg. 675 ft.
Hart Oil Corp.'s No. 1 C. O. Edwards A-1 ..... Shut down 576 ft.

MENARD COUNTY

Carpenter & Robbins' No. 1 Kothman, NW cor. SW SW Sec. 22 ..... 165 ft. 34-6 grav. oil at 414-18 ft., fishing 415 ft.
J. C. Barnett and T. H. Drake's No. 1 Callan City Co. Ranch, Sec. 22 ..... Shut down 520 ft.
May & Clark's No. 1 Collen, Sec. 22, B.S.&F. ..... Shut down 505 ft.
Moody Oil Corp.'s No. 1 G. S. Allison, SE cor. Johann Kuhler Sur. No. 1,473 ..... Location.
Renfro et al's No. 1 J. Davis ..... Shut down 260 ft.

MIDLAND COUNTY

Gholson et al's (was Orbit Oil Co.'s) No. 1 Moreland, C SE Sec. 17, Blk. 39, T.&P. Sur., T-1-S ..... Top salt 1,910 ft.; drlg. 3,255 ft.
Shoup et al's No. 1 Roy Parks ..... Drlg. 610 ft.

MITCHELL COUNTY

Boehm Drilling Co.'s No. 1 Harry Hyman, C NW SE Sec. 90, Blk. 29, W.&N.W. Sur. ..... Shut down 505 ft.
California Oil Co.'s No. 8 C. M. Adams, Lease No. 2, CSL NE NW Sec. 11, Blk. 28, Twp. 1n, T.&P.R.R. Sur.. Shut down 1,090 ft.
Magnolia Oil Co.'s No. 5 Foster, Sec. 17, Blk. 29, T.&P.. Drlg. 1,656 ft.
Paul Teas et al's No. 1 A. C. Mills, NW cor. C. A. O'Keefe Sub. 11, J. P. Smith Sur. ..... Total depth 1,766 ft. (s.l.), plugged back to 1,650 ft.; top pay 1,550 ft.; to test on pump.
Robert Thraves' No. 1 C. Way, Sec. 91, Blk. 27, T.&P. Sur., T-1-N ..... Total depth 2,503 ft.; shut down

PECOS COUNTY

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. Z, T.C.Ry. Sur. ..... Location.
Benedum & Trees' No. 1 B. T. Corder ..... Spudded and shut down.
Bob Elmore's No. 2 Holmes, SE cor. Sec. 45, Blk. 1, I.&G.N. Sur. ..... Top salt 435 ft.; shut down 900 ft.
Buell & Hagan's No. 1 Pryor & Wilson, Sec. 15, Blk. 5 .. Drlg. 1,250 ft.
Diamond Pet. Co.'s No. 1 Blackstone & Slaughter ..... Moving in material.
M. C. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H.&G.N. Sur., elev. 2,555 ft. ..... Shut down 785 ft.
Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A-6,887 ..... Spudded and shut down.
Furman Oil Co.'s No. 1 T. W. McNear, Jr., Sec. 46, Blk. 9 ..... Moving in material.
Everett et al's No. 1 J. Fields ..... Spudded and shut down.
Gibson Oil Corp.'s No. 1 R. R. Russell, Sec. 69, Blk. 3, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 2,025 ft.
Kershaw & Livingston's No. 1 Cannon, Sec. 54, Blk. A-3.. Drlg. 2,070 ft.
Kirby Pet. Co.'s No. 1 University, NE cor. Sec. 36, Blk. 24, University Land ..... Location.
Mid-Kansas O. & G. Co.'s No. 1 Pryor & Wilson, NW cor. Sec. 3, Blk. 5, T.C.R.R. Sur. ..... Drlg. 850 ft.
Miller & McNees' No. 1 W. C. Tyrrell ..... Cellar.
Phillips Pet. Co.'s No. 1 Nutt, SE cor. Sec. 8, Blk. 135 ... Rig.
B. J. Spikes' No. 1 George Brown ..... Shut down 700 ft.
Rowan & Tong's No. 1 Scharff & Blackman, Sec. 4, Blk. 9 ..... Drlg. 410 ft.
Roxana Pet. Corp. and Kirby Pet. Co.'s No. 1 University, Sec. 23, Blk. 26 ..... Rig on ground.
Stidham & Thrasher's No. 1 Belgrade Ranch Co., Sur. 3, Mrs. S. Tompkins A-4,695 ..... Flowing sulphur water; shut down 2,020 ft.
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Drlg. 920 ft.
Vacuum Oil Co.'s No. 1 Elsinore Cattle Co., Sec. 60, Blk. D, G.C.&S.F. Sur. ..... Drlg. 1,450 ft.
World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. 8, T.P.R.R. Sur., elev. 2,810 ft. ..... Cleaning out 950 ft.
World Oil Co.'s No. 1 Serf, C NE Sec. 10, Blk. 130, T.&St.L. Sur., elev. 3,435 ft. ..... Shut down 1,604 ft.

Yates Pool, Pecos County

Pandem Oil and Gibson Oil Co.'s (was Allsman & Bell's) No. 6 River Bed ..... Rig.
Pandem Oil and Gibson Oil Co.'s (was Allsman & Bell's) No. 8 River Bed ..... Hole full of fluid, 25 per cent water; shut down 1,095 ft.
Pandem Oil and Gibson Oil Co.'s (was Allsman & Bell's) No. 9 River Bed ..... Location.
Pandem Oil and Gibson Oil Co.'s (was Allsman & Bell's) No. 13 River Bed ..... Location.
Pandem Oil and Gibson Oil Co.'s No. 14 River Bed ..... Location.
Pandem Oil and Gibson Oil Co.'s No. 15 River Bed ..... Location.
California Co.'s No. 2 Yates, Sec. 34, Blk. 194 ..... Rig.
California Oil Co.'s No. 14 I. G. Yates, Lease 1, Sec. 34, Blk. 194 ..... Drlg. 1,320 ft.
California Oil Co.'s No. 15 I. G. Yates, Lease 1, Sec. 34, Blk. 194 ..... Drlg. 1,105 ft.
California Oil Co.'s No. 16 I. G. Yates, Lease 1, Sec. 34, Blk. 194 ..... Drlg. 1,120 ft.
California Co.'s No. 2 M. A. Smith, Lease 1, Sec. 37, Blk. 194, G.C.&S.F. ..... Drlg. 990 ft.
California Co.'s No. 1 Mrs. M. A. Smith, Lease 2, Sec. 26, Blk. 194, G.C.&S.F. Sur. ..... Location.
California Co.'s No. 12 Smith, Lease 3 ..... Shut down 1,250 ft.
Douglas Oil Co.'s No. 2 J. T. Sellman ..... Hole full salt water 795-860 ft.; 25 ft. sulphur water 1,614-15 ft.
Gulf Prod. Co.'s No. 8 I. G. Yates, Runnels Co. School Land No. A-2,169 ..... Pumped 285 bbls. 11 hrs. from sand 405-49 ft. showing 17 per cent b.s. and water which treats out 18-gravity oil; drlg. plug at 1,178 ft.
Humble O. & R. Co.'s No. 7 M. A. Smith, SW cor. NW Sec. 36, Blk. 194 ..... Drlg. 1,278 ft.
Kirby Petroleum Co.'s No. 1 J. H. Tippett, CWL E half W half Sec. 40, Blk. 194 ..... Drlg. 450 ft.
Matador Oil Co.'s No. 1 Smith, NW cor. SE NE Sec. 24, Blk. 194, G.C.&S.F. Sur. ..... Location.
McDonald et al's No. 1 A. A. Parsell, C NW SE Sec. 28, Blk. A, G.C.&S.F.R.R. Sur. ..... Shut down 100 ft.
McMan and Marland's No. 16 Yates ..... Rig.
Marland Oil Co.'s No. 11 Yates-A ..... Location.
Marland Oil Co.'s No. 12 Yates-A ..... Location.
Marland Oil Co.'s No. 13 Yates-A ..... Location.
Michaelson & Tabot's No. 1 River Bed ..... Top salt 430 ft.; drlg. 630 ft.
Mid-Kansas and Transcontinental's No. 14 Yates-A, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Waiting on machine.
Mid-Kansas and Transcontinental's No. 17 I. G. Yates-A, Sec. 31, Blk. 194 ..... Location.
Mid-Kansas and Transcontinental's No. 18 Yates-B ..... Show oil 1,095 ft.; flowed sulphur water 1,108 ft.; plugged back to 1,087 ft.; 400 ft. water; 300 ft. oil in hole.
Mid-Kansas and Transcontinental's No. 22 Yates-B ..... Fishing 1,255 ft.
Mid-Kansas and Transcontinental's No. 6 Yates-C ..... Rigging up.
Mid-Kansas and Transcontinental's No. 10 Yates-C ..... Location.
Mid-Kansas and Transcontinental's No. 1 Yates-F ..... Top pay 1,152 ft.; shut down 1,324 ft.; flowed 990 bbls. in 10 hrs.
Mid-Kansas and Transcontinental's No. 1 I. G. Yates-G. Sec. 34½, Blk. 194 ..... Cellar.

Mid-Kansas and Transcontinental's No. 9 Smith-Taylor.. Waiting on machine.
Mid-Kansas and Transcontinental's No. 12 Smith-Taylor.. Drlg. 815 ft.
Mid-Kansas and Transcontinental Co.'s No. 14 Smith-Taylor, Sec. 33, Blk. 194, G.C.&S.F.R.R. Sur. ..... Drlg. 715 ft.
Oregon Oil Corp.'s No. 1 Yates ..... Drlg. 1,333 ft.
T. G. Shaw's No. 1 Yates, Sec. 58, Blk. 1, I.&G.N. Sur. .... Location.
Skelly Oil Co.'s No. 1 J. H. Tippett, Runnels County School Land A-2,169, Sec. 108, Blk. 194, G.C.& S.F.R.R. ..... Setting 6-in. casing 1,775 ft.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle Est., Sec. 123, Blk. 3, D.&P. Sur., elev. 2,912 ft. ..... Salt water 2,610 ft.; total depth 3,003 ft.; shut down for orders.
Pinto Canyon Oil Co.'s No. 1 Fields, 1,760 ft. S and E NW cor. Sec. 74, Blk. 3, D.&P. Sur. ..... Location.

REAGAN COUNTY

California Oil Co.'s No. 4 University, NW cor. Sec. 3, Blk. 7 ..... Top salt, 1,340 ft; drlg., 2,340 ft.
Hagan & Emch's No. 1 E. W. Loftin, C E half Sec. 1,271, D.&S.E. Sur. ..... Top salt, 1,065 ft; drlg., 2,614 ft.
Marland Oil Co.'s No. 1 University, SE cor. SW Sec. 26, Blk. 8 ..... Drlg., 1,150 ft.
Moody Oil Co.'s No. 1 R. A. Walters ..... Rig.
Roxana Pet. Co.'s No. 1 Sawyer Cattle Co., 3,000 ft. S of CNL Sec. 15, Blk. A, R. Casey Sur. ..... Top salt, 1,105 ft; drlg., 2,300 ft.
Skelly Oil Co.'s No. 2 University, SE SW SE Sec. 35, Blk. 8 ..... Rig.
The Texas Company's No. 2 J. D. Sugg, C Sec. 165, Blk. 2, T.&P.R.R. Sur. ..... Top salt, 990 ft; drlg., 2,338 ft.
Texon O. & L. Co.'s No. 1-B University, Group 1 ..... Top pay 6,250 ft.; 2,000 ft. oil; drlg., 7,860 ft.
White et al's No. 1 Shofner & Sterling, NE cor. NW Sec. 10, 2 m. N of Big Lake ..... Top salt 1,375 ft.; hole full fresh wtr., 3,155 ft; S.D., 2,510 ft.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Show oil, 1,105-10 ft; pulling 8-in., 1,960 ft.
Grisham-Hunter Corp.'s No. 1 Rathge & Connor, 600 ft. from N line and 5,760 ft. from W line of Sec. 26, Blk. 3, H.&G.N. ..... Top salt 1,037 ft.; drlg. 1,484 ft.
David R. Thompson's No. 1 A. A. Eddins ..... Total depth 5,130 ft.; shut down; to drill deeper.
Vacuum Oil Co.'s No. 1 Grisham-Hunter ..... Drlg., 1,990 ft.
World Oil Co.'s No. 1 Duff, 1,500 ft. from S and 850 ft. from NE lines, R. S. Johnson Sur. No. 68, elev. 2,774 ft. ..... Top Delaware lime 4,185 ft.; hole full brackish salt water 4,362-4,500 ft.; plugged back to 4,237 ft.; shot 70 qts. 4,135-4,235 ft.; little oil in hole; shut down 4,500 ft.; moved tools to No. 1 Biggs.

RUNNELS COUNTY

Empire G. & F. Co.'s No. 1 C. C. Gray, Sec. 147, E.T.R.R. Sur. ..... Hole full fresh water 2,250-57 ft.; small show oil 2,460-90 ft.; shut down for orders 2,602 ft.
Gibson & Johnson's No. 1 Harris Est., Juliana Voske Cabrera Sur. ..... Location.
Gibson & Johnson's No. 1 H. P. Serratt, C SE NW Sec. 150, E.T.R.R. Sur. ..... Drlg., 2,000 ft.
Globe Oil Co.'s No. 1 J. H. Webb ..... Drlg., 1,775 ft.
Jones Oil Syndicate's No. 1 W. Hale ..... S.D., 2,000 ft.
Jones Oil Syndicate's No. 1 W. Hale (Runnels), NE cor. Sub. 29, Sec. 109, E.T.R.R. Co. Sur. ..... New location.
McLean et al's No. 1 G. W. Clayton ..... C.O., 1,050 ft.
Marland Oil Co.'s and E. L. Smith Oil Co.'s No. 1 A. C. Herring, C Sec. 121, E.T.R.R. Sur. (3,000-ft. test) .... Skidding rig.
Marland Oil Co.'s No. 1 R. R. Russell, near CSL J.F.G. Sur. ..... Drlg., 385 ft.
Kennedy et al's No. 1 J. E. Tally ..... Shut down 1,720 ft.
May et al's No. 1 J. M. Schneider, John Wall Sur. ..... ⅛ bailer salt water 1,032 ft.; hole full water 1,100-20 ft.; fishing 1,775 ft.
Miles Oil Co.'s No. 1 Charles Ray, Sec. 21, T.&N.O. Sur. ..... Cellar and machine.
Miles Oil Co's No. 1 L. S. Lawhon, NE cor. Sec. 68. .... Show gas, 960-80 ft; drlg., 2,449 ft.
Royal Pet. Co.'s No. 1 A. C. Willingham ..... Preparing to run 10-in. 1,410 ft.
Sillix Pet. Co.'s No. 1 Malone ..... Location.
R. B. Summers et al's No. 1 J. W. Reese, M. J. Parramore Sur. No. 26 ..... S.D., 750 ft.
Swensondale Oil Co.'s No. 1 E. A. Werner ..... Fish., 2,449 ft.
Vacuum Oil Co., Lou Ladd et al's No. 1 J. S. Flanagan, NW cor. Subdivision No. 29, Domingo Diaz Sur. No. 532 ..... Location.
Vacuum Oil Co. et al's No. 1 H. B. Fowler, subdivision No. 23, Domingo Diaz Sur. No. 532 ..... Rigging up.
Watchorn O. & G. Co.'s No. 1 J. L. King ..... Hole full salt water, 1,633-91 ft.; drlg., 3,300 ft.

SCHLEICHER COUNTY

Beavers & Leath et al's No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T.C. Sur. ..... Shut down 400 ft.

SCURRY COUNTY

J. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Tearing down rig to move to new location.

STERLING COUNTY

Orr et al's (to be taken over by Empire G. & F. Co.) No. 1 Neal Reed, CNL Sec. 15, Blk. 30, W.&N.W Sur. ..... Shut down 1,390 ft. (cor.).

STONEWALL COUNTY

Henshaw Oil Corp.'s No. 1 W .P. Moore, Sec. 136, Blk. 1, H.&T.C. Sur. ..... Location.

SUTTON COUNTY

J. D. Nantz et al's No. 1 G. Allison, C NE Sec. 29, Blk. B, H.E.&W.T.R.R. Sur. ..... S.D., 100 ft.
National Potash Co.'s No. 1 J. N. Ross ..... Shut down 991 ft.

TAYLOR COUNTY

A. J. Brown et al's No. 1 Henslee, NE cor. Sec. 5, Blk. 4, S.P.R.R. Sur. ..... Shut down 2,935 ft.
Dorning & Perrine's No. 1 J. A. Hammer, C N 100 acres, Sec. 23, Blk. 19, T.&P. Sur., elev. 1,904 ft. .... Shut down 455 ft.
Gilbert Johnson and Day Bros.' No. 1 C. M. Brown, Sec. 1, Blk. 6, T.&P. Sur. ..... Hole full water 2,170-2,220 ft.; cased off; drlg., 2,890 ft.
Owen & Sloan's No. 1 Lattimer, Sec. 14, Blk. 9, T.&P. Sur. ..... Cleaning out 2,985 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett ..... Location.
Champlin Ref. Co.'s No. 1 Corder, C Sec. 110, Blk. 1, C.C.S.D. Sur. ..... Drlg., 2,015 ft.
Deep Rock Oil Co.'s No. 1 H. C. Nolke, Sec. 4, Blk. A-2, T.C.R.R. Sur. ..... Drlg., 1,780 ft.
Humble Oil Co.'s No. 1 University, Sec. 15, Blk. 34 ..... Drlg., 1,483 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. ..... Moving in material.
Milham Exploration Co.'s No. 1 Bassett, Sec. 77, Blk. Y, W. H. Robertson Sur. ..... Fish., 2,409 ft.
Bryan and Breen's No. 1 Allison & Burke, C NW Sec. 10, Blk. 176, Texas-Mex. R.R. Sur. ..... Location.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.R.G.&N.G.R.R. Sur. ..... Rig.

TERRY COUNTY

Kingsland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... S.D., 4,008 ft; contract depth.

TOM GREEN COUNTY

George Amery's No. 1 Wilkey, C SW Sec. 3, B.A.L. Sur. ..... Location.
Collins et al's No. 1 Jones, CSL Sec. 646, Shaffer Sur. .... Rig.
Cox et al's No. 1 Llano ..... Drlg., 673 ft.
Fitzgerald & Taliaferro's No. 1 Bennett ..... Shut down 1,955 ft.
Lone Eagle Oil Co.'s No. 1 Sharp, SE W Elzel Sur. No. 167 ..... Spudded and S.D.
Marland Oil Co.'s No. 1 J. W. Johnson-A ..... S.D., 3,355 ft.
Tulsa Oil Co.'s No. 1 Adams, C SW Sec. 163, Blk. 11, S.P.R.R. Sur. ..... Shut down 1,020 ft.
Haubelt et al's No. 1 Johnson ..... S.D., 1,205 ft.
World Oil Co.'s No. 1 Mrs. F. T. March ..... Location.

UPTON COUNTY

Mark Curtis et al's (was Hults et al's) No. 2 Giddings, 5,336 ft. S and 6,678 ft. E of NW cor. Throckmorton C. School Land, League 1, elev. 2,757 ft. ..... Shut down 875 ft.
Penn and Atlantic's No. 1 Live Stock Exchange, Sec. 34, Blk. 38 ..... Drlg., 80 ft.
Snowden & McSweeney's No. 2 Ed S. Hughes, Sec. 9, Blk. 3½, C.C.S.D.&R.G.N.G.R.R. Sur. ..... Drlg., 660 ft.
The Texas Company and Cordova Union's No. 1 Union Land, Sec. 23, Blk. 35, H.&T.C. ..... Top pay 2,098 ft.; swabbed 60 bbls. in 36 hrs. at 2,271 ft., 3 per cent water; 2,200 ft. sulphur water 2,390-2,405 ft.; total depth 3,201 ft.; plugged back to 2,350 ft. and lost bailer; fishing.
Wise & Jackson's No. 1 J. H. Porter, SW cor. SW SW Sec. 184, Blk. E, elev. 2,592 ft. ..... Top pay 3,419 ft.; total depth 3,517 ft., gray lime; shut down.

VAL VERDE COUNTY

A. Blume et al's No. 1 Moore Est., Sec. 153, J. Mitchell Sur., elev. 953 ft. ..... Shut down 3,000 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G.H.&S.A. Sur. ..... Shut down 2,940 ft.
East Del Rio Oil Co.'s No. 1 Russell, SE cor. Sec. 153, Del Rio Town Sur., elev. 941 ft. ..... S.D., 3,320 ft.
Magnolia Pet. Co.'s No. 1 Whitehead, Sec. 81, D.G.C. &S.F. Sur., elev. 1,770 ft. ..... Drlg., 6,375 ft.
Independent Operator's No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 3,900 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 4,210 ft.
W. B. Thraves et al's No. 1 W. E. Wilson ..... Shut down 905 ft.

WARD COUNTY

Alfredo Del Cambre's No. 1 Lee Monroe, Sec. 50, Blk. 33, H.&T.C. Sur. ..... Spudded and shut down.
E. H. Devore et al's No. 1 Black, Sec. 214, Blk. 34, H.&T.C. Sur. ..... Spudded and shut down.
Estex Oil Co.'s No. 1 W. A. Estes, Sec. 4, Blk. B-29, 3,500-foot test ..... Bldg. rig.
Great Basin Oil Co.'s No. 1 Davis, C SW 8 half Sec. 32, Blk. 1, H.&G.N. ..... Rigging up standard tools.
Selby Oil Co. et al's No. 1 A. G. Dooley et al, Sec. 85, Blk. A, G.M.M.&A. Sur. ..... Drlg. 960 ft.

WINKLER COUNTY

Amerada Pet. Corp.'s No. 1 J. B. Walton, SW cor. NW Sec. 48, Blk. 26, elev. 2,833 ft. ..... Wtr. shut off; making 15,000,000 ft. gas and slight spray oil; drlg. cavings, 2,440 ft.
Atlantic O. P. Co.'s No. 2 Grisham-Hunter-A, Sec. 34, Blk. B-5 ..... Shot 480 qts. 2,850-2,999 ft.; shot 960 qts. 2,800-2,991 ft.; no results; total depth 3,000 ft.; moving in rotary.
Atlantic O. P. Co.'s No. 5 Grisham-Hunter-"A", SW NE SW Sec. 34, Blk. B-5 ..... Top salt 1,610 ft.; top lime 2,486 ft; waiting on cmt., 2,488 ft.
Atlantic O. P. Co.'s No. 6 Grisham-Hunter, NW cor. SE SW Sec. 34, Blk. B-5 ..... Top salt 1,400 ft.; top lime 2,486 ft.; set 8¼-in. casing 2,499 ft.
Atlantic O. P. Co.'s No. 7 Grisham-Hunter-A, NE SE E half, SW Sec. 34, Blk. B-5 ..... Drlg., 760 ft.
Atlantic O. P. Co.'s No. 8 Grisham-Hunter-A, SE NE E half SW Sec. 34, Blk. B-5 ..... Set. 12-in. csg., 268 ft.
Atlantic O. P. Co.'s No. 2 Grisham-Hunter-E, NW cor. Sec. 41, Blk. B-5 ..... New location.
Atlantic O. P. Co.'s No. 3 Grisham-Hunter-"E", CNL N half NE Sec. 41, Blk. B-5 ..... Location.
Atlantic O. P. Co.'s No. 4 Grisham-Hunter-E, SE NE NE Sec. 41, Blk. B-5 ..... Top salt, 1274 ft; set. 8-in. 2,317 ft.
Atlantic O. P. Co.'s and Collett's No. 3 Hendrick-F, NW NE NW Sec. 40, Blk. 46 ..... Drlg., 453 ft.
Atlantic and Collett's No. 4 Hendrick-F, NE NW Sec. 40, Blk. 26 ..... Drlg., 155 ft.
Atlantic O. P. Co.'s No. 1 Grisham-Hunter-C (was Lemar) SW cor. Sec. 40, Blk. B-5 ..... Total depth 2,978 ft.; gas pressure split connections; est. 75,000,000 ft. gas; running wild; trying to kill gas; top salt 1,573 ft.; top lime 2,200 ft.
Atlantic O. P. Co.'s No. 3 Ida Hendricks-D, NW SE NW Sec. 29, Blk. B-5 ..... Top salt, 1,415 ft; fish. bit, 2,571 ft.
Atlantic O. P. Co.'s No. 4 Ida Hendricks-D, NE SW NW Sec. 29, Blk. B-5 ..... Top salt, 1,536 ft; set. 8-in. csg., 2,590 ft.
Atlantic O. P. Co.'s No. 5 Ida Hendricks-D, SW SE S half NW Sec. 29, Blk. B-5 ..... Set. 12-in. csg., 281 ft.
Atlantic O. P. Co.'s No. 6 Hendricks-D, SE cor. SW S half NW Sec. 29, Blk. B-5 ..... Rigging up rig.
Atlantic O. P. Co.'s No. 7 Hendricks-D, NW cor. SW S half NW Sec. 29, Blk. B-5 ..... Bldg. rig.
Atlantic O. P. and Collett's No. 2 Ida Hendricks-F ..... Top salt 1,984 ft.; top lime 2,458 ft.; set 8¼-in. casing 2,475 ft.
V. T. Bolin et al's No. 1 Brown ..... S.D., 860 ft. for fuel.
Danciger et al's No. 1 John Sealy, SW cor. NE Sec. 93, Blk. A, G.M.M.B.&A. Sur. ..... Drlg., 1,232 ft.
Gibson-Johnson's No. 1 Lack, C SW Sec. 3, Blk. 74 ..... Top salt, 1,950 ft; S.D., 2,701 ft.
Gibson-Johnson's No. 1 Lunn Daugherty, SE NW SW Sec. 3, Blk. 74 ..... Location.
Gulf Prod. Co.'s No. 2 T. G. Hendricks, NE NW NW Sec. 34, Blk. B-5 ..... Rig standing.
Gulf Prod. Co.'s No. 8 T. G. Hendricks, Sec. 34, Blk B-5.. Top lime, 2,480 ft; T.D., 2,530 ft; to shoot pipe at bottom.
Gulf Prod. Co.'s No. 9 T. G. Hendricks, Sec. 34, Blk. B-5.. Top salt 1,837 ft.; top lime 2,558 ft; top pay, 2,824 ft; set 6-in. csg., 2,855 ft; flowed 242 bbls., 20% b.s. and wtr.
Gulf Prod. Co.'s No. 11 T. G. Hendricks, Sec. 34, Blk. B-5.. Top salt, 1,625 ft; top lime, 2,453 ft; T.D., 2,488 ft.
Gulf Prod. Co.'s No. 12 T. G. Hendricks, Sec. 34, Blk. B-5.. Top lime, 2,342 ft; top salt, 1,410 ft; set 8-in. csg., 2,344 ft.
Gulf Prod. Co.'s No. 13 T. G. Hendricks, Sec. 40, Blk. B-5.. Top salt 1,340 ft.; top lime 2,244 ft; drlg., 2,437 ft; 6,000,000 ft. gas.
Gulf Prod. Co.'s No. 15 T. G. Hendricks, C NW SW NW Sec. 40, Blk. B-5 ..... Drlg., 1,305 ft.
Humble O. & R. Co.'s No. 1 Hendricks-C, SE cor. Sec. 32, Blk. 26 ..... Drlg., 1,725 ft.
Humble O. & R. Co.'s No. 1 J. B. Walton-B, SE cor. N half Sec. 47, Blk. 26 ..... Derrick.
Humble O. & R. Co.'s No. 1 J. B. Walton-A, NW cor. Sec. 48, Blk. 26 ..... Derrick.
Humble O. & R. Co.'s No. 2-A, Sec. 34, Blk. B-5 ..... Top salt 1,340 ft.; top lime 2,223 ft.; shut down 2,500 ft.
Humble O. & R. Co.'s No. 3 Grisham-Hunter, Sec. 34, Blk. B-5 ..... Top salt, 1,362 ft; top lime, 2,183 ft; S.D., 2,898 ft; 50,000,000 ft. gas.
Humble O. & R. Co.'s No. 7 Grisham-Hunter ..... Top salt, 1,240 ft; top lime, 2,530 ft; drlg., 2,530 ft.
Humble O. & R. Co.'s No. 8 Grisham-Hunter ..... Top salt 1,240 ft.; top lime 2,323 ft; drlg., 2,667 ft.
Humble O. & R. Co.'s No. 9 Grisham-Hunter, NE NE Sec. 34, Blk. B-5 ..... Rigging up rig.
Humble O. & R. Co.'s No. 11 Grisham-Hunter, SW cor. W half NW Sec. 41, Blk. B-5 ..... Rigging up rig.
Humble O. & R. Co.'s No. 12 Grisham-Hunter, NE SW NE Sec. 34, Blk. B-5 ..... Rigging up rig.
Humble O. & R. Co.'s No. 13 Grisham-Hunter, NW SE NE Sec. 34, Blk. B-5 ..... Bldg. rig.
Humble O. & R. Co.'s No. 4 Ida Hendricks-B, SE N half SE Sec. 29, Blk. B-5 ..... Top salt, 1,200 ft; drlg., 2,696 ft.
Humble O. & R. Co.'s No. 5 Ida Hendrick-"B", NW NE SE Sec. 29, Blk. B-5 ..... Top salt, 1,250 ft; top lime, 2,552 ft; set 8-in., 2,554 ft.
Humble O. & R. Co.'s No. 6 Ida Hendrick-"B", NE NW SE Sec. 29, Blk. B-5 ..... Top salt, 1,345 ft; drlg., 2,653 ft.

Independent O. & G. Co.'s No. 3 Grisham-Hunter, SE NW SW Sec. 34 ..... Top salt, 1,485 ft; drlg., 2,100 ft.

Independent O. & G. Co.'s No. 4 Grisham-Hunter, NE SW SW Sec. 34 ..... Top salt, 1,480 ft; top lime, 2,547 ft; drlg., 2,605 ft.

Independent O. & G. Co.'s No. 3 Vardeman-B, SE NE NW Sec. 41, Blk. B-5 ..... Top salt 1,340 ft.; top lime 2,328 ft.; drilling 2,705 ft.

Independent O. & G. Co.'s No. 4 Vardeman-B, SW cor. E half NW Sec. 41, Blk. B-5 ..... Top salt 1,552 ft.; top lime 1,552 ft.; drilling 2,425 ft.

Independent O. & G. Co.'s No. 5 Vardeman-B, NW SE NW Sec. 41, Blk. B-5 ..... Top salt 1,570 ft.; top lime 2,395 ft.; set 8-inch casing 2,397 ft.

Independent O. & G. Co.'s No. 1 E. W. Cowden, SE NW NW Sec. 36, Blk. B-5 ..... Straightreaming 2,440 ft.; total depth 2,540 ft.

Liner Drlg. Co.'s No. 1 Seth-Campbell, NE cor. Sec. 2, Blk. B-5 ..... Shut down 450 ft.

Landreth Prod. Co.'s No. 1 T. G. Hendricks-B, Sec. 40, Blk. 26 ..... Location.

Landreth and Roxana's No. 2 Ida Hendricks-A, Sec. 29, Blk. B-5 ..... Top salt 1,440 ft.; drlg. 2,671 ft.

Landreth and Roxana's No. 5 Ida Hendrick-A, NW NE SW Sec. 29, Blk. B-5 ..... Drlg. 2,030 ft.

Landreth and Roxana's No. 6 Hendricks-A, NE cor. NW SW Sec. 29, Blk. B-5 ..... Rigging up rig.

Llano Oil Co.'s No. 1 F. B. Armstrong, at common cor. Secs. 12, 13, 18 and 19, Blk. B-6, School Land ..... Location.

Marland Oil Co.'s No. 1 T. G. Hendricks, SE cor. W half Sec. 33, Blk. 26 ..... Lost returns; mixing mud 685 ft.

Marland Oil Co.'s No. 2 T. G. Hendricks, NE SE SE Sec. 33, Blk. 26 ..... Cellar.

Marland Oil Co.'s No. 3 T. G. Hendricks, NE SE SW Sec. 33, Blk. 26 ..... Building rig.

Magnolia Pet. Co.'s (was G. M. Church et al's) No. 2 Ida Hendricks ..... Show oil 2,750 ft.; top pay 2,865 ft.; total depth 2,961 ft.; ran 5-in. with packer to 2,955 ft.; failed to shut off water; plugging back.

Magnolia Pet. Co.'s No. 5 Ida Hendricks ..... Top salt 1,624 ft.; top lime 2,509 ft.; drilling 2,974 ft.

Magnolia Pet. Co.'s No. 6 Ida Hendricks, Sec. 29, Blk. B-5 ..... Top salt 1,430 ft.; top lime 2,420 ft.; top pay 2,750 ft.; drilling 2,845 ft.

Magnolia Pet. Co.'s No. 7 Ida Hendricks ..... Top lime 2,448 ft.; drilling 2,740 ft.

Magnolia Pet. Co.'s No. 8 Ida Hendricks ..... Top salt 1,510 ft.; shut down 2,598 ft.

Murchison Oil Co. et al's No. 1 Grisham-Hunter-B, NE cor. SW SW Sec. 35, Blk. B-5 ..... Top salt 1,335 ft.; shut down 2,427 ft.

Murchison Oil Co. et al's No. 2 Grisham-Hunter-B ..... Location.

Murchison Oil Co. et al's (was Marland Oil Co.'s) No. 4 Grisham-Hunter-B ..... Top lime 2,500 ft.; top salt 1,394 ft.; top pay 2,835 ft.; drilling 3,085 ft.

Mining & Engineering Co.'s No. 1 T. G. Hendricks, Sec. 10, Blk. B-12 ..... Hole full fresh water; shut down 1,232 ft.

Murchison Oil Co. and Cranfill Bros.' No. 2 Grisham-Hunter-A ..... Location.

Murchison Oil Co. and Cranfill Bros.' No. 4 Grisham-Hunter ..... Location.

Murchison Oil Co. and Cranfill Bros.' No. 1 Hendricks-H (5-acre tract), Sec. 33, Blk. 26 ..... Location.

Pure Oil Co.'s No. 4 Hendricks ..... Top lime 2,402 ft.; drlg. 2,404 ft.

Pure Oil Co.'s No. 5 Hendricks ..... Top salt 1,643 ft.; top lime 2,461 ft.; drlg. 2,471 ft.

Pure Oil Co.'s No. 4 Hendricks-B ..... Top lime 2,404 ft.; top salt 1,504 ft.; drlg. 2,595 ft. in lime.

Pure Oil Co.'s No. 5 Hendricks-B, SE SW SE Sec. 34, Blk. B-5 ..... Top lime 2,420 ft.; top salt 1,412 ft.; drlg. 2,620 ft.

Pure Oil Co.'s No. 6 Hendricks-B ..... Top salt 1,315 ft.; top lime 2,388 ft.; drlg. 2,485 ft.

Pure Oil Co.'s No. 7 Hendricks-B, NE SE SE Sec. 34, Blk. B-5 ..... Drlg. 1,280 ft.

Pure Oil Co.'s No. 8 Hendricks-B, SE NE SE Sec. 34, Blk. B-5 ..... Drlg. 510 ft.

Pure Oil Co.'s No. 9 Hendricks-B, NW NE SE Sec. 34, Blk. B-5 ..... Drlg. 506 ft.

Pure Oil Co.'s No. 10 Hendricks-B, NE NW SE Sec. 34, Blk. B-5 ..... Drlg. 358 ft.

Pure Oil Co.'s No. 11 Hendricks-B, SW NW SE Sec. 34, Blk. B-5 ..... Drlg. 60 ft.

Pure Oil Co.'s No. 12 Hendricks-B, NW SW SE Sec. 34, Blk. B-5 ..... Setting 12-inch casing 216 ft.

Pure Oil Co.'s No. 1 Grisham-Hunter-C ..... Drlg. 2,130 ft.

Pure Oil Co.'s No. 6 Grisham-Hunter, NW SW Sec. 41, Blk. B-5 ..... Drlg. 365 ft.

Republic Prod. Co.'s No. 1-A Grisham-Hunter-B, SW cor. E half SE Sec. 41, Blk. B-5 ..... Top salt 1,240 ft.; top lime 2,135 ft.; standardizing 2,390 ft.

Republic Prod. Co.'s No. 3 Grisham-Hunter-B, NE cor. SE Sec. 41, Blk. B-5 ..... Top lime 2,197 ft.; top salt 1,280 ft.; total depth 2,980 ft.; killing gas.

Republic Prod. Co.'s No. 4 Grisham-Hunter-B, NW cor. E half SE Sec. 41, Blk. B-5 ..... Top lime 2,355 ft.; drlg. 2,568 ft.

Republic Prod. Co.'s No. 2 Hendricks-A, NE E half SW Sec. 45, Blk. 26 ..... Top salt 1,240 ft.; top lime 2,135 ft.; fishing 2,302 ft.

Republic Prod. Co.'s No. 1 Hendricks-C, SW NE NE Sec. 42, Blk. B-5 ..... Building rig; shut down.

Roxana Pet. Corp.'s No. 4 Hendricks-B, NE cor. SW S half SE Sec. 29, Blk. B-5 ..... Building rig.

Roxana Pet. Corp.'s No. 6 Ida Hendricks-C, SW SE N half NW Sec. 29, Blk. B-5 ..... Top salt, 1,302 ft.; top lime 2,529 ft.; setting 8-inch casing 2,534 ft.

Roxana Pet. Corp.'s No. 7 Ida Hendricks-C, SE SW N half NW Sec. 29, Blk. B-5 ..... Top salt 1,326 ft.; setting 8-inch casing 2,589 ft.

Roxana Pet. Corp.'s No. 8 Hendricks-C, SW cor. N half NW Sec. 29, Blk. B-5 ..... Rigging up rig.

Roxana Pet. Corp.'s No. 3 Grisham-Hunter-D ..... Top salt 1,170 ft.; top lime 2,280 ft.; coring 2,735 ft.

Roxana Pet. Corp.'s No. 4 Grisham-Hunter-D, NE cor. S half NE Sec. 41, Blk. B-5 ..... Top salt 1,230 ft.; fighting gas 2,498 ft.

Roxana Pet. Corp.'s No. 5 Grisham-Hunter-D, SE SW NE Sec. 41, Blk. B-5 ..... Shut down 600 ft.

Roxana Pet. Corp.'s No. 6 Grisham-Hunter-D, SW SE NE Sec. 41, Blk. B-5 ..... Cellar.

Roxana Pet. Corp.'s No. 1 Grisham-Hunter-E ..... Drlg. 1,010 ft.

Roxana Pet. Corp. and Llano Oil Co.'s No. 2 W. F. Scarborough, SW cor. NE Sec. 1, Blk. C-22, School Land ..... Top salt 1,120 ft.; top pay 3,135-40 ft.; flowing small heads.

Sheldon & Burden's No. 1 Ida Hendricks, SW cor. SE Sec. 28, Blk. B-5 (10-a. tract) ..... Top salt 1,260 ft.; top lime 2,609 ft.; top pay 2,719 ft.; total depth 3,243 ft.; cleaning out.

Skelly Oil Co.'s No. 1 Hendricks, NW cor. W half NE Sec. 40, Blk. 26 ..... Lost returns; mixing mud 640 ft.

Southern C. O. P. Co.'s No. 2 T-89 Grisham-Hunter-A, Sec. 35, Blk. B-5 ..... Top salt 1,189 ft.; drlg. 2,301 ft.

Southern C. O. P. Co.'s No. 3 T-89-A Grisham-Hunter-A ..... Top salt 1,072 ft.; top lime 2,352 ft.; drlg. 2,352 ft.

Southern C. O. P. Co.'s No. 4 T-89-A Grisham-Hunter-A ..... Location.

Southern C. O. P. Co.'s No. 1 Ida Hendricks, 3-T-67-A, C SW NW NE Sec. 4, Blk. B-12, elev. 2,784 ft. ..... Top lime 2,63f ft.

Southern C. O. P. Co.'s No. 2 T-67-A, NE SE Sec. 42, Blk. B-5 ..... Top salt 1,835 ft., top lime 2,620 ft.; setting 6-inch casing 2,624 ft.

Southern C. O. P. Co.'s No. 2 Ida Hendricks 3-T-67-A ..... Top salt 1,525 ft.; top lime 2,654 ft.; drlg. 2,868 ft.

Southern C. O. P. Co.'s No. 3 Ida Hendricks, T-67-3-A, Sec. 4, Blk. B-12 ..... Location.

Southern C. O. P. Co.'s No. 1 Ida Hendricks, T-67-E, SE NE Sec. 42, Blk. B-5 ..... Drlg. 2,521 ft.

Southern C. O. P. Co.'s No. 2 T-67 Ida Hendricks-F ..... Top salt 1,715 ft.; cem. 6-in. 2,2[illegible] ft.; shut down 2,250 ft.

Southern C. O. P. Co.'s No. 3 T-67 Ida Hendricks-F ..... Top salt 1,702 ft.; top lime 2,601 ft.; top pay 2,990 ft.; shut down 3,050 ft.

Southern C. O. P. Co.'s No. 4 T-67 Ida Hendricks-F ..... Top salt 1,800 ft.; top lime 2,704 ft.; drlg. ,3055 ft.

Southern C. O. P. Co.'s No. 5 T-67 Ida Hendricks-C ..... Top pay 2,890 ft.; shut down 2,906 ft.

Southern C. O. P. Co.'s No. 2 T-67 Hendricks-B ..... Top salt 1,866 ft.; drlg. 2,733 ft.

Southern C. O. P. Co.'s No. 1 T-67 Hendricks-3-B ..... Top lime 2,505 ft.; drlg. 2,657 ft.

Southern C. O. P. Co.'s No. 2 T. G. Hendricks, T-67-3B, NE SW SW Sec. 33, Blk. 26 ..... Top lime 2,436 ft.; drlg. 2,427 ft.

Southern C. O. P. Co.'s No. 3 Hendricks 3-T-68-A ..... First gas 2,400 ft.; 8,000,000 ft. gas 2,420 ft.; total depth 2,420 ft.; drlg. by tools.

Southern C. O. P. Co.'s No. 1 T-88 Ida Hendricks-C, NW cor. Sec. 28, Blk. B-5 ..... 6,000,000 ft. gas 2,665 ft.; top pay 2,883-96 ft.; 500 ft. oil; total depth 2,915 ft.; drlg. by tools.

Southern C. O. P. Co.'s No. 4 Ida Hendricks, T-88-C ..... Top salt 1,290 ft.; top lime 2,535 ft.; shut down 3,050 ft.

Southern C. O. P. Co.'s No. 1 Ida Hendricks, T-88-G, SW SE Sec. 28, Blk. B-5 ..... Top lime 2,612 ft.; drlg. 2,613 ft.

Southern C. O. P. Co.'s No. 2 T-88 Hendricks-H ..... Top salt 1,232 ft.; drlg. 2,799 ft.

Southern C. O. P. Co.'s No. 3 Ida Hendricks, T-88-H, SW NW SW Sec. 28, Blk. B-5 ..... Top salt 1,300 ft.; drlg. 2,096 ft.

Southern C. O. P. Co.'s No. 2 T-88 Hendricks-A ..... Bailing casing 2,713 ft.

Southern C. O. P. Co.'s No. 2 Ida Hendricks, T-88-I, SE NE E half NE Sec. 30, Blk. B-5 ..... Rig.

Southern C. O. P. Co.'s No. 3 Ida Hendricks, T-88-I, NE EE E half NE Sec. 30, Blk. B-5 ..... Rig.

Southern C. O. P. Co.'s No. 1 T. G. Hendricks, T-88-K, NE cor. Sec. 41, Blk. 26 ..... Drlg. 1,286 ft.

Southern C. O. P. Co.'s No. 1 Hendricks, T-88-M, Sec. 33, Blk. 26 ..... Location.

Southern C. O. P. Co.'s No. 2 Hendricks, T-88-M, Sec. 33, Blk. 26 ..... Location.

Southern C. O. P. Co.'s No. 3 Hendricks, T-88-M, Sec. 33, Blk. 26 ..... Location.

Southern C. O. P. Co.'s No. 1 E. G. Hutchings, T-90, NE cor. E half SE Sec. 47, Blk. 26, elev. 2,835 ft. ..... Top salt 935 ft.; top lime 2,340 ft.; pipe stuck 2,704 ft.

Texon O. & L. Co.'s No. 2 Grisham-Hunter-A ..... Top lime 2,250 ft.; total depth 2,727 ft.

Texon O. & L. Co.'s No. 3 Grisham-Hunter-A, NW cor. W half SE Sec. 41, Blk. B-5 ..... Top salt 1,450 ft.; shut down 2,539 ft.

Texon O. & L. Co.'s No. 4 Grisham-Hunter-A, NE cor. W half SE Sec. 41, Blk. B-5 ..... Rig and shut down.

Turman & Maxwell's No. 5 Hendricks, SE cor. E half NE Sec. 29, Blk. B-5 ..... Top lime 2,560 ft.; top salt 1,295 ft.; drlg. 2,900 ft.

Turman & Maxwell's No. 6 Hendricks, NW cor E half NE Sec. 29, Blk. B-5 ..... Top salt 1,217 ft.; top lime 2,471 ft.; top pay 2,780 ft.; total depth 2,938 ft.

Turman & Maxwell's No. 8 Hendricks ..... Top salt 1,260 ft.; top lime 2,350 ft.; top pay 2,680 ft.; shut down 2,799 ft.

White Eagle O. & R. Co.'s (was Gibson & Johnson's) No. 1 F. A. Lock, 1,320 ft. W of NE cor. Sec. 36, Blk. 74, NW of discovery well, elev. 2,830 ft. ..... Top lime 3,155 ft.; drlg. 3,320 ft.

Late Fields

(Continued from Page 39)

had some oil in the Hunton lime, and correlations based upon the Sylvan illustrate that the well is running almost the same structurally as the old dry hole of the Tidal Oil Co., which was drilled in Section 3-8-4, and which had excellent showings. The old Tidal failure was for some time the most closely observed well in this part of the State. It was drilled upon a surface structure, and the Amerada well was thought to be located considerably higher than the old test. It has proved rather disappointing thus far.

An important development in the Osage fields is the exhausting of water in the Naval Reserve tracts. Kay County Gas Co.'s No. 2, NE cor. SW Section 22-24-7, has been flowing wide open and gauged 1,127 bbls. on Monday of this week. The well has not been deepened, and the total depth is 2,899 feet. No. 3, SW cor. SE SE Section 9-23-7, which was making considerable water, is now reported flowing 60 bbls. per hour steadily, and the water has apparently exhausted.

In the Pearson Switch-St. Louis region of Pottawatomie County, there is little change. The McCulloch Oil Co. and Mid-Continent Petroleum Corp.'s No. 1 Smith, NW cor. SE Section 25-7-4, is holding steadily at 1,870 bbls. daily from the Simpson sand. The Magnolia Petroleum Co.'s No. 2 Robbins, the big Hunton lime well in Section 15-7-4, is making 3,800 bbls., and the Westheimer & Daube and Gypsy Oil Co.'s No. 2 Leclaire, in Section 23-7-4, is making 1,881 bbls. All of these wells are free from water.

KANSAS

News of a 4,000-bbl. well in the Oxford Townsite Pool brought the Kansas fields out of their state of lethargy which had prevailed for many months. The well was drilled in on the Oxford townsite area, and continues the southwest trend of that operation. It seems that the farther southwest they drill the better wells are encountered.

The Roxana Petroleum Corp.'s No. 2 Barnes, SE cor. SW SW Section 14-32-2, is flowing 4,128 bbls. from the regular chat formation found at 2,012-2,112 feet after a shot of 200 quarts. This is the best well to be completed in the Kansas fields for many years, and brings back memories of the old Augusta completions.

The new well is a west offset to a producing well, and its output may mean that an exceptionally rich spot is located on this side of the pool. There are no adjacent dry holes to condemn the region, and much is expected from the locations west and southwest of the new well.

The Douglass Oil Co. is reported to have made a location for a wildcat test in Section 25-14-11, Russell County. This company has taken over a block of 10,000 acres of oil and gas leases.

JOSEPH SEEP'S CONDITION

OIL CITY, Pa., Mar. 17.—Reports from the home of Joseph Seep of Titusville indicate that the aged oil man is resting more comfortably. Mr. Seep, who will be 90 years of age May 7 has been confined to his home several weeks and for the longest period in years has been absent from his duties as chairman of the board of the South Penn Oil Co.

NEW JERSEY OFFICIALS TOURING OIL FIELDS

A group of officials of the Standard Oil Co. of New Jersey left New York City on Monday of this week for an inspection trip over the various oil fields of the Mid-Continent region.

The party was headed by Walter C. Teagle, president, and S. B. Hunt, treasurer, and the first stop scheduled was Baton Rouge, La., where the large refinery of the Standard Oil Co. of Louisiana will be visited.

From Baton Rouge, the party will travel to Fort Worth and the West Texas fields, returning for a trip through the Seminole area and other Oklahoma fields. A two days' stop will be made at Tulsa, Okla., the headquarters of the Carter Oil Co.

COL. E. H. HILPP NEW PRESIDENT OF I.O.M.A.

(Continued from Page 32)

he had reviewed the history of the organization. Now he said he would "take up the story at the point he left off last time and talk about the things that we will do. The handwriting is plain and a great change is taking place in our industrial competition. Some of the oil men are blind to what is going on. This is the day of organization. No one rides alone successfully today. Organized this association is a great selling force, unorganized we amount to very little. The chain store idea in the oil industry has reached its greatest development and will be succeeded by the organization that gives the greatest service to the public which is the controlling force in the making of a business success."

It was stated by the speaker as evidence of the correctness of the ideas on which organization was founded that the membership was now greater by far than it was last October. Another proof that its merchandising plans were correct was that the sale of the identifying signs and devices was immensely greater. Three times as many of the signs announcing that the coupons of the membership were accepted at a station had been sent out as a year ago. All of this served to stamp the name of the association on the minds of the buying public. That this was necessary and that the work must be continued was given as the reason that the full pressure of the major companies had never been exerted. The time was bound to come when they would exert their full strength to impress the public with their superior ability to serve. "We have an organization that would do credit to many of the major companies," Mr. Overholzer said, "and firmly organized we have nothing to fear." He closed his address with an appeal for full support of the ideals of the association claiming for the membership that they were the favored sons of the industry. Mr. Overholzer stated that the Pennsylvania Refining Co. of Karns City, Pa., had been admitted to refinery membership, making a total of seven refinery members.

Nicholas' Address

At the opening of his address President Nicholas stated that he had noted that a paper had stated that at this time he would sing his "swan song." He said that he was no singer and was not going to make any swan song but simply talk with the members in the same friendly confidential way as had been his custom in the past. He stated that Mr. Hinchey and a committee had been working on a plan for a more complete identification of the members stations by signs and color scheme. Their work, he said, had aroused great interest. The committee would be glad if the members would see them and let the members of the committee have their ideas.

In talking to the members he said that his idea was that the organization was before anything else but a business proposition. Every oil man in joining should consider the cost and if he could not see that it would pay him to join he should stay out. He thought that the progress made had been remarkable and that a member who was not satisfied should sever his connection for a member who was not sold could do the organization more harm than many outside opposers. A new definition of independent oil man is necessary Mr. Nicholas declared. Formerly an independent simply meant that the concern had no standard oil affiliations. Today the greatest menace to the independent oil man is the great integrated company. Today independence means basic freedom of competition.

"There must me mutual helpfulness and a sure source of supply that could be relied upon not to sell to the cut price competitor," Mr. Nicholas said. "The refiner must be considered and given helpful assistance of a practical kind. There are, it is said, over 700 jobbers in Ohio. In a few years from now that number will be greatly reduced. Study what force is going to cause the adjustment and get in line. There is one thing that indicates the trend and that is the type of conventions. Contrast this gathering of earnest business men with the convention at Kansas City at which I was elected to the presidency of the old organization. It took five men to elect me and they had to send out and bring in the fifth man. There were big banquets. There were good speakers on general topics but they did not get down to business."

New Members

Of the past year he said that the selling out of good members had been one of the problems of the organization. It seemed that as fast as they got members with one hand they lost other members on the other by the selling out plan. This caused a constant change in the membership.

He offered a number of suggestions to the members that would make the path of the new board more pleasant. The first was that the members should pay their accounts whether for dues or for merchandise promptly, as promptly as they did their other bills. Mr. Nicholas advocated more definite identification of all members' plants, stations, trucks and the like. This means with some the doing away with pet private brands. He said there is every reason why the identification signs of the members should mean the same kind of merchandise, not one kind of oil here and another there.

Pet Brands

"Keep your pet brands if you must," he said, "but have the standard specifications as well. It has been found to pay with gasoline. It will be found to pay more with oils. Members should deal with members wherever possible.

Mr. Nicholas thought that the time had come when the membership contract should carry a sell-out clause which would give the organization a right to buy out any one who was planning a sale of his business and showed why this was most necessary to keep gaps out of the territory of the organization. Territorial rights must also be adjusted and this he thought could be accomplished in many cases by a merger or sale of competing business.

"Above all," he said, "be loyal to the organization, to the officials whom you have selected to manage for you and to each other. That is the first and last essential of a successful powerful organization of this kind."

CRUDE OIL CONTRACTS A PROBLEM IN HENDRICKS POOL CURTAILMENT

By James H. Dameron

FORT WORTH, Tex., Mar. 19.—Existing crude contracts in the Hendricks Field of Winkler County is the knot at present in the plan to curb the pool's production under a proration agreement. This difficulty, however, is expected to be ironed within a week or 10 days.

The Committee of Seven, appointed by the Texas Railroad Commission at the request of Winkler County operators, held an all-day session Saturday in Fort Worth. But because of the problems developed as a result of the existing crude contracts in the field, no definite action was taken on proration.

R. D. Parker, chief supervisor of the oil and gas division of the Railroad Commission, and also chairman of the Committee of Seven, adjourned the meeting subject to call. Another meeting will be held either March 23 or 24 at Austin, Tex. The Railroad Commission will probably be in executive session at the same time.

Preceding the proration committee's meeting held Saturday, Hendricks Pool operators formulated a proration plan when they held a meeting in Fort Worth last Thursday. The meeting was called by E. A. Landreth, president of the Landreth Production Corp., with a view of aiding the Committee of Seven and speeding up work in bringing the field under control.

Under that proposal the field would be divided in 40-acre tracts and each tract in production would be considered as a unit in the proration plan. These tracts would then be divided into the available market outlet.

Under that plan there are 65 units to be figured in the available outlet. For the purpose of calculation it was estimated the outlet was around 185,000 bbls. That would give each unit a production of 2,846 bbls. for each 40 acres. With four wells to the 40 acres, each well's production would be 711 bbls.

The available outlet, however, is high. That much oil can be pumped through the pipe lines running to the railroad and through the trunk lines reaching into Hendricks, but at the present time a market has not been found for that much Hendricks crude.

The outlet of the field is to be the total of all outlets nominated by all marketers and transporters out of the field. It was planned to have the conservation regulation in effect for six months and so long thereafter as agreeable. All existing contracts are to be recognized, but future contracts will be reviewed by the committee except intercompany contracts. An umpire is to be chosen to serve. Another feature of the plan is that no wells are to be shot, nor are any wells to be put on air.

This plan was favored by the Hendricks Pool operators and is reported to have received favorable consideration by the Committee of Seven. However, the matter of existing contracts will require more time to iron out, but it is the opinion of the operators that the field will go under a proration agreement within a short while.

In addition to Mr. Parker, the committee is comprised of the following: Underwood Nazro, Gulf Production Co.; W. S. Farish, Humble Oil & Refining Co.; R. B. Pringle, Independent Oil & Gas Co.; E. A. Landreth, Landreth Production Corp.; W. B. Hamilton, independent oil operator, and Tom Cranfill, Cranfill & Reynolds.

PENNSYLVANIA MARKET SHOWING IMPROVEMENT

OIL CITY, Pa., Mar. 17.—Gasoline is stronger in the Pennsylvania refined market than it has been in some time. The demand has not improved but prices have become better, the larger companies raising theirs and the smaller ones following suit. Kerosene is unchanged in both demand and price over the previous week but refiners and marketers point out that the big demand is due to start in a week or two. Fuel oil is stronger with demand good and price improved. Neutrals are stronger with better prices and good demand. Cylinder stocks are unchanged. Bright stock has shown a little improvement. Wax is in fair demand and prices are stronger.

OIL SECURITIES IN FRACTIONAL GAIN

(Continued from Page 136)

tory and less liable to the severe fluctuations which have characterized the past. The industry, itself, should achieve a much more stable basis."

The consolidated balance sheet of Amerada corporation and subsidiary companies as of December 31, 1927, shows current assets of $6,074,899 against current liabilities of $1,785,757. The company's capital stock stands at $13,581,375 compared with $10,925,375 at the end of 1926. Surplus, after adjustments of $2,125,659 for drilling costs and taxes in prior years, is listed at $6,685,797, against $6,993,430 at the end of 1926.

Skelly Oil Co.

Net earnings of Skelly Oil Co. in 1927 totaled $7,841,728.97 despite the low price situation created by an unparalleled period of overproduction. This figure is after deductions for operating and administrative expenses, taxes, etc., but before interest, depletion, depreciation and other capital extinguishments, for which excepted items $6,403,501.18 was deducted. There remained $1,438,227.79 available for dividends and surplus, equal to $1.31 per share on the 1,093,669 6-16 shares outstanding during the year. This compares with $5,691,345.61 in 1926, or $5.56 per share. These comparative figures mark and measure the unsatisfactory conditions besetting the oil industry during 1927.

Dividends at the rate of $2 per share per annum were paid to the stockholders quarterly in 1927, as previously.

Standard of Kentucky

Report of the Standard Oil Co. of Kentucky for the year ended December 31, 1927, shows net profit of $4,492,008 after Federal taxes, equivalent to $6.56 a share (par $25) earned on 684,120 shares of stock. This compares with $7,309,568 or $10.74 a share on 680,502 shares in 1926.

Income account for year 1927 compares as follows:

	1927	1926
Profit	$5,163,559	$8,306,619
Federal tax	671,551	997,051
Net profit	$4,492,008	$7,309,568
Dividends	3,072,831	2,716,134
Surplus	$1,419,177	$4,593,434
P. & L. surplus	17,277,497	15,858,319

Balance sheet of Standard Oil Co. of Kentucky as of December 31, 1927, compares as follows:

Assets

	1927	1926
Plant equipment, etc.	$31,598,996	$29,575,721
Merchandise	6,777,946	8,254,982
*Cash, etc.	14,421,937	12,876,390
Total	$52,798,879	$50,707,093

Liabilities

†Capital stock	$17,103,010	$17,012,559
Accounts payable	4,392,305	5,455,371
Depreciation res.	12,347,238	10,262,649
Insurance fund, etc.	1,007,278	781,579
Tax reserve	671,551	1,336,616
Surplus	17,277,497	15,858,319
Total	$52,798,879	$50,707,093

*Includes accounts receivable and other investments. †Par $25.

PRODUCTION INCREASING IN OKLAHOMA-KANSAS

(Continued from Page 131)

maining two companies comprising the six largest, did not enter the Seminole Field with large plants. The Gypsy company built one plant of 30,000 gallons capacity but the Phillips Petroleum Co. remained out of the field entirely.

The detailed list of the six major companies in this section are listed in the following table, together with the capacities of the operating plants in Oklahoma and Kansas.

Of the total, Oklahoma holds the great bulk of the combined capacity. In fact, 2,405,000 gallons of the total of 2,570,200 gallons is in Oklahoma. The Empire Oil & Refining Co. stands as the major manufacturer in Kansas as a result of their development of the Kansas oil producing fields and more recently have added a large plant at Wichita to serve as a combination booster station and gasoline plant on the gas line leading from the Panhandle to Kansas City.

Production of Natural Gasoline in Oklahoma and Kansas by Months During 1927 Compared with the Total of the United States.
(Millions of Gallons)

1927—	Okla. and Kan.	Ttotal U. S.	Pct. Okla. and Kan. as of Total
January	42.6	132.1	32.0
February	41.7	123.2	33.8
March	45.6	137.4	33.2
April	45.3	133.2	34.0
May	47.7	135.2	35.3
June	47.2	129.9	36.3
July	48.2	131.0	36.7
August	48.7	135.0	36.1
September	50.5	136.3	37.0
October	53.0	143.6	36.9
November	53.7	143.2	37.3
December	57.3	147.5	38.8
Total, 1927	582.5	1,627.6	35.8
Total, 1926	503.1	1,356.8	37.0
January, 1928	53.9	143.9	37.5

Capacities of Plants by Companies in Oklahoma and Kansas

	Oklahoma	Kansas
Sinclair Oil & Gas Co.	444,000	15,000
Phillips Petroleum Co.	281,000	.....
Carter Oil Co.	236,000	.....
Empire Oil & Refining Co.	140,000	68,300
Gypsy Oil Co.	193,400	.....
Mid-Continent Oil Co.	128,000	.....
Total	1,422,400	83,300
Total for State	2,405,000	165,200

PLAN TO MOVE CRUDE WESTWARD BY PIPE LINE FROM THE SEABOARD

OIL CITY, Pa., Mar. 17.—For the first time in history oil will be pumped through a part of the transcontinental system of pipe lines from the Atlantic seaboard westward, according to an announcement made by the National Transit Co. in connection with its annual statement. The necessary changes will be completed within the next 30 days and crude will then be moving over this route to interior points. The change marks a radical change from past practice in pipe line operation.

"The trunk line traffic from the Mid-Continent fields has greatly decreased during the past few years, although some oil is still being moved, and from orders now on the books indication is that this business will continue in more or less volume for some time to come," the National Transit statement declares in explaining the change in direction for crude oil movement. "An encouraging feature, however, in the trunk line situation, is seen in the arrangements now being formulated to pump crude westward from the Atlantic seaboard into the interior. By this arrangement crude oil produced in the State of Texas, pumped through pipe lines to the Gulf port, loaded in tank ships and conveyed to Philadelphia, will be pumped into the lines of the National Transit Co. and moved westward. This is a radical departure from the practice since the beginning of the transcontinental pipe lines, and the first time that oil will have been pumped west instead of eastward. Some changes in the line construction and pumping stations will be necessary to accomplish this plan. The prospect of the new westward traffic, together with increased interior deliveries, indicates in our opinion, that the pipe line business has a brighter outlook than it has had for some time."

It is understood here that the Atlantic Refining Co. will be the first patron of the National Transit Co. in its movement of oil from the Atlantic Coast westward which will begin in about 30 or 40 days. The Atlantic Refining Co. has arranged to make shipments of Texas crude from the shipside at Point Breeze, Philadelphia, to the Eclipse Works at Franklin. No tariff has yet been published. At present the Eclipse plant in addition to Pennsylvania crude is said to be using a quantity of Mid-Continent crudes. What effect the new plan will have on its purchases of Mid-Continent crude is not known.

The Atlantic Oil Producing Co., producing subsidiary of the Atlantic Refining Co., is a large producer and buyer of oil in the West Texas fields. The company recently ordered material for 15 additional steel storage tanks for its farm at Midland, Tex., of 80,000 bbls. capacity each. Company has at present twelve 80,000-bbl. tanks and five of 55,000 bbls. capacity each, partly filled with oil. In addition, it has five 80,000-bbl. tanks in the Hendricks Field, Winkler County, and plans several others of similar capacity there.

The 10-inch pipe line of Atlantic Pipe Line, from Hendricks to the Midland tank farm, 71 miles, will be increased to 45,000 bbls. daily capacity by addition of two intermediate stations. This line also handles oil produced and purchased by Magnolia Petroleum and 5,000 bbls. daily of that produced by Pure Oil Co. A connection is made at Midland with Magnolia's trunk line system in West Texas, and a joint tariff has been published to apply on crude moving from Hendricks to Gulf Coast via the Atlantic and Magnolia lines.

It is believed that possible customers of the pipe line in its new arrangement may also be found at Pittsburgh and Parkersburg, W. Va. It is thought here that points as far inland as Cleveland may also use the system to advantage. Changes for the planned movement are being made at the various National Transit pump stations and a small stretch of pipe line is being laid from Franklin to Turkey City.

Pure Oil Lines

That the delivery business to refineries in this section is so great that the company would not have been able to handle it without the pipe line capacity acquired from the Pure Oil Co. is claimed by the statement which tells of this development of the year as follows:

"The company during the year acquired the pipe line system of the Pure Oil Pipe Line Co., comprising both trunk and gathering lines lying north of the southern Butler County, Pennsylvania, line and extending to Titusville and Warren. The greater part of the Pure Oil system purchased either paralleled or was located adjacent to the National Transit Co. lines, so that the two systems were readily consolidated. This consolidation was so well planned and all arrangements so carefully made, that on December 19, 1927, a very short time after the ownership changed hands, oil was being run and credits made on the National Transit Co. books. The daily average runs from customers' tanks connected to the Pure Oil system now amount to about 700 bbls.

"This additional trunk line capacity permits the National Transit Co. to adequately serve all refineries in its district without mixing different grades of crude or necessitating delay in deliveries. The company is now in our opinion, in a most advantageous position with respect to handling the crude requirements of the local refineries, many of which have been enlarged and modernized—thereby increasing the requirements for crude oil. Daily deliveries are made to the Eclipse Works of the Atlantic Refining Co. at Franklin, and to the Pennzoil Co. at Rouseville, the latter being reputed to be the largest refinery in the world operating exclusively on Pennsylvania grade oil.

Refinery Deliveries

"Recently a large tank farm was completed by the South Penn Oil Co. near the Pennzoil Plant, comprising six 80,000-bbl. steel tanks. At this time the National Transit Co. is pumping crude to this tank farm from points in West Virginia and southeastern Ohio. The increased delivery business to the refineries could not have possibly been handled without the additional line capacity acquired, unless new lines had been laid at a considerable cost.

The National Transit Co. is now making deliveries of crude petroleum to the following refineries in its district: Atlantic Refining Co., Eclipse Works, Franklin; American Oil Works, Titusville; Butler County Oil Refining Co., Bruin; Crystal Oil Works, Oil City; W. H. Daugherty & Son Refining Co., Petrolia; Emlenton Refining Co., Emlenton; Empire Oil Works, Reno; Franklin Creek Refining Corp., Franklin; Franklin Leasing Co., Franklin; Independent Refining Co., Oil City; Oil Creek Refining Co., Titusville; Pennsylvania Paraffine Works, Titusville; Pennsylvania Refining Co., Karns City; the Pennzoil Co., Oil City; Seneca Oil Works, Warren; Superior Oil Works, Warren; Starlight Refining Co., Karns City; Tidioute Refining Co., Tidioute; Titusville Oil Works, Titusville; United Refining Co., Warren."

Talked of 40 Years Ago

Commenting on the announcement of the National Transit Co. that crude oil would be shipped through its lines from tidewater at Philadelphia to western Pennsylvania refining points, George Coyle, general superintendent of the Prairie Pipe Line Co. and a member of its board of directors, said:

"We have been talking about this very thing for 40 years. When I was in the Ohio Field not long after I had started in pipe line service we used to discuss what would become of the pipe lines when the Ohio fields gave out. It was generally considered that there was no oil in quantity west of Ohio, just as they had thought years before that there was no oil outside the State of Pennsylvania, and we figured it out that Ohio refineries in time would have to get their crude supplies from the East and West Virginia and that perhaps foreign fields would be drawn upon to supply America, in which case the crude would be shipped west from the Atlantic Seaboard.

"Since those days about 9,000,000 or 10,000,000 bbls. of oil has been produced in the United States west of Ohio."

The bulk of the oil pipe lined from the Mid-Continent to the East Coast is carried through the Prairie pipe lines to the Mississippi River, thence through the Illinois pipe line across Illinois, Indiana and Ohio to a junction with the Tuscorora pipe line which conveys it through Pennsylvania and New Jersey to tidewater. The action of the National Transit Co. in reversing the oil flow through its lines will not interfere in any way with the movement of oil eastward from the Mid-Continent fields producing high grade oil as the National Transit is only one of several lines in the East that run to Seaboard.

LOUISIANA-ARKANSAS STORAGE INCREASED

SHREVEPORT, La., Mar. 17.—Despite increased runs to stills by refiners in this territory during February, amounting to an increased consumption of 56,250 bbls., there was an increase of 66,837 bbls. in the amount of oil in steel and earthen storage in the various districts of this territory as of March 1, compared to stocks on February 1. This, however, is a small item in contrast to the increase of 5,091,460 bbls. as of February 1 compared to stocks at the first of the year. Oil in storage March 1 totaled 28,138,559 bbls., and February 1 stocks totaled 28,071,722 bbls.

The increase may be attributed to practical suspension of shipment of heavy oil by one pipe line and the absolute suspension of movement of this class of crude by another, both undertaken as a means of facilitating handling of Oklahoma light crude to relieve the emergency there. Movement of Smackover heavy oil to El Dorado refineries and to Baton Rouge as the principal outlets continued, however; which probably, with the increase in refinery runs in both centers, accounts for the increase being no larger. Standard Pipe Line Co. having resumed shipment of Smackover oil via the Kenova-Mississippi River line on a somewhat larger scale than it had been handling it, also served to prevent a larger increase in stocks.

Steel storage in the Shreveport division as a whole totaled 20,722,785 bbls., an increase of 319,912 bbls., and oil in pits totaled 7,415,774 bbls., a decrease of 253,075 bbls., a net increase of 66,837 bbls. North Louisiana storage totaled 11,445,231 bbls., in steel and 618,958 in pits; Arkansas, 9,277,554 bbls. in steel and 6,796,816 bbls. in pits. Storage by districts March 1 was as follows:

	Steel	Earthen
Louisiana		
Caddo	2,348,637	618,958
Bellevue	220,039	.....
De Soto	1,067,285	.....
Cotton Valley	322,019	.....
Red River	30,780	.....
Haynesville	4,040,132	.....
Homer	3,328,178	.....
Urania	88,161	.....
Total	11,445,231	618,958
Total storage	12,064,189	
Arkansas		
Smackover	7,247,521	6,610,536
El Dorado	1,897,644	.....
Nevada County	132,389	186,280
Total	9,277,554	6,796,816
Total storage	16,074,370	
Both States	20,722,785	7,415,774
Total storage	28,138,559	

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Lincoln County.....Sec. 36-16N-4E
Noble County.....Sec. 16-21N-1W
Pottawatomie County.....NE 16-7N-2E
Pottawatomie County..Lots 1-2 & W/2 NE 16-6N-5E.

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W. A. DURANT, Secretary,
Commissioners of the Land Office,
Oklahoma City, Okla.

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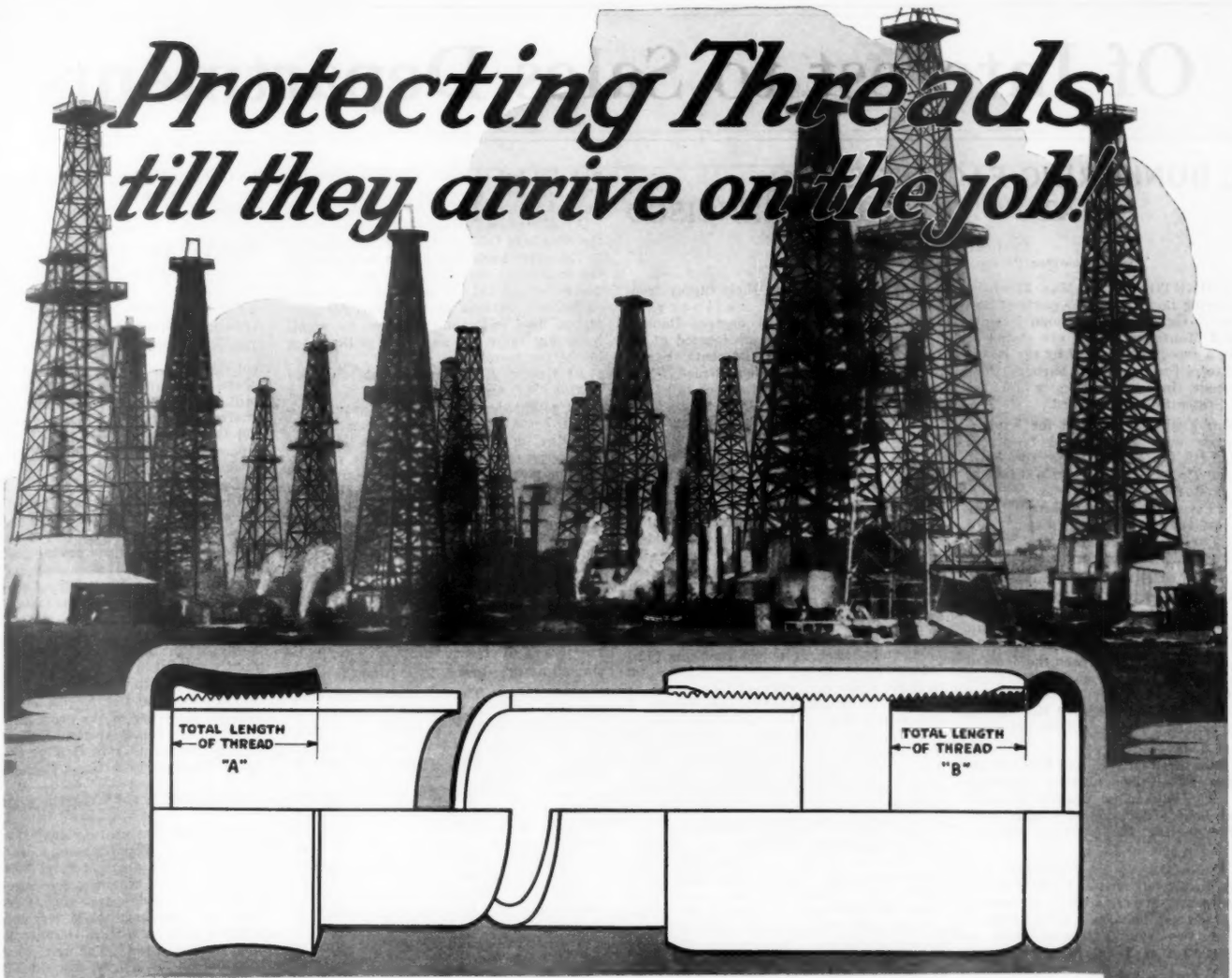

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In order to protect this quality, particularly that of good threads, and to assure operators of receiving material in as near perfect condition as possible, it is the practice of this Company to use a special form of thread protection known as ring and nipple protectors, which are screwed into the coupling and over the threaded end of the pipe before shipment. Five important features of these protectors are:

1. Rings and nipples are taper threaded to fit all sizes and classes of material.
2. Total length of pipe thread "A" is protected, as well as that portion of coupling thread "B" that engages with pipe thread.
3. Form of rings and nipples are such as to provide maximum strength for weight of ring and nipple.
4. Ends of pipe and couplings as well as threads are fully protected.
5. There is no additional cost for this special protection.

Such protection is desirable not only for long hauls by rail into the Mid-Continent, Gulf Coast and California fields but also in unloading and transporting pipe to the derrick. Successful use of pipe, however, does not depend alone upon the manufacture. Your cooperation in adopting careful methods of handling in the field is necessary to assure full advantage of this special protection. Thread protection is another evidence of service which has made "NATIONAL" products —*Standard of America's Oil Fields.*

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

District Sales Offices in The Larger Cities

Of Interest to Sales Departments

OIL BUNKERING FACILITIES AT PORT OF SAN FRANCISCO

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Mar. 17.—The oil bunkering facilities of the ports of San Francisco, Oakland, Richmond, Santa Cruz and Monterey, Calif., are stated in detail in a report just issued by the Board of Engineers for rivers and harbors, War Department, in co-operation with the United States Shipping Board.

At San Francisco fuel oil for bunkering vessels may be obtained from the Standard Oil Co. of California, the Associated Oil Co., the Shell Oil Co. of California, and the Union Oil Co. of California. These companies maintain tanks having an aggregate storage capacity of approximately 175,000 bbls. Most of the bunkering is done from barges.

The Standard Oil Co. maintains bunkering facilities on wharves at Sixteenth Street, with a bunkering capacity of 800 bbls. per hour, and at Taylor Street, with a bunkering capacity of 300 bbls. per hour. The company also uses the eastern side of Pier No. 43. From its Richmond plant it operates five fueling barges, having a total capacity of 68,500 bbls. and a delivery capacity of 800 to 3,000 bbls. per hour.

The Associated Oil Co. has facilities at the outer end of the wharf at Sixteenth Street. The bunkering capacity is 1,500 bbls. per hour. This company also operates five fueling barges, two self-propelled.

The Union Oil Co. of California has facilities on the left side of Central Basin at Seventeenth Street, with a bunkering capacity of 800 bbls. per hour, and it maintains two fueling barges with a bunkering rate of 1,000 bbls. per hour each.

Shell Facilities

The Shell Oil Co. of California has facilites for fueling small boats at Leavenworth Street and on Islais Creek, at Third and Army Streets. No large vessels can be accommodated at either location. This company operates five fueling barges from its bunkering and unloading plant at Martinez, at the upper end of Carquinez Strait. These barges have an aggregate carrying capacity of 28,000 bbls. and bunkering rate of 500 to 2,000 bbls. per hour each.

The Shell Co. of California has 15 steel tanks at Martinez and two at San Francisco. The storage capacity is 400,000 bbls. at Martinez, and 30,000 bbls. at San Francisco. The two intake pipe lines at Martinez are each 12-inch lines and the one at San Francisco is an 8-inch line. The source of supply is in California and the oil is received by pipe line and steamer. The grades handled are Diesel 26 degrees Baume and fuel oil 15 degrees Baume. Normally 250,000 bbls. are kept in stock. The actual berthing space for bunkering is 738 feet and the depth of mean low water is 29 feet loaded. The bunkering capacity is 3,000 bbls. per hour. There are two discharge pipe lines of 12 inches each. All usual sizes of hose are used in any length desired. The company has five barges towed with carrying capacity 21,239 bbls. and bunkering capacity from 500 to 2,000 bbls. per hour. The method of delivery from oil to vessels is by pumping from the barge to vessels, 3, 4, and 6, and 8-inch hose are used with connections in any size required.

Standard Storage

The Standard Oil Co. has one steel storage tank of 10,894 bbls. at Seventh and Irwin Streets and the other of 9,500 bbls. at Mason and Jefferson Streets. It has two intake pipe lines each 8-inches in diameter. They receive their supply from their Richmond, Calif., refinery by barge and its oil is 14 degrees Baume. Its bunkering facilities are located at its two stations, one at Sixteenth Street and the other at Taylor Street. The maximum quantity kept in stock is 10,000 bbls. in one station and 9,500 bbls. at the other. Its normal quantity is 5,000 bbls. at one station and 8,000 bbls. at the other. The combined bunking space is 520 feet with approximately 23 feet at mean low tide at Sixteenth Street and 22 feet at Taylor Street. The bunkering capacity at Sixtenth Street is 800 bbls. per hour, and at Taylor Street 300 bbls. per hour. There is one discharge pipe line at each of these stations, each of 8-inch diameter, and the hose is 2 and 4 inches diameter at each wharf. At the Taylor Street wharf, the company has four towed barges with capacity of 66,394 bbls. and one self-propelled barge of 2,110 bbls. The bunkering capacity is from 800 to 3,000 bbls. per hour. The method of delivery is by pumping power through 4 and 6-inch rubber hose with 400 feet of hose on each barge, the connections of hose being 4 and 6 inches on each barge. These barges operate from the Richmond plant, calling at the wharf when necessary.

Associated Oil Company

The Associated Oil Co. has storage facilities at Sixteenth Street with four steel tanks of a total storage capacity of 84,000 bbls. There are two intake pipe lines, the one for fuel oil being 10 inches in diameter, the one for Diesel oil 6 inches diameter. The supply is from California to the pipe line terminal, thence by barge. The fuel oil is approximately 17 degrees Baume and the Diesel oil approximately 26 degrees Baume. The maximum quantity kept in stock is 60,000 bbls. and the normal quantity 40,000 bbls. The bunkering facilities are at the wharf at Sixteenth Street, the actual berthing space for bunkering being 326 feet and the depth of water 40 feet mean low tide. The bunkering capacity is 1,500 bbls. per hour. There are two discharge pipe lines, one 10-inch and one 6-inch with four hose with a total of 200 feet in length. The company has five barges, three operating from San Francisco and two from Oakland. Three of these barges are towed and two are self propelled. Their carrying capacity is 31,000 bbls. The oil is pumped from barge to vessel in 4 and 6-inch hose, the connection being from 3 to 8 inches.

The Union Oil Co. of California has storage facilities at Seventeenth Street with two steel tanks of a total capacity of 38,488 bbls. There is one intake pipe line 8 inches in diameter. The supply from Oleum, Calif., is by barge and steamer. The fuel oil is of commercial grades and the maximum quantity kept in stock is 35,000 bbls., the normal quantity in stock being 20,000 bbls. The bunkering facilities are at the wharf at Seventeenth and Illinois Streets, the berthing space being 381 feet.

The depth of water is 17 feet, mean low water, and the bunkering capacity is 800 bbls. per hour. There is one discharge pipe line of 6 inches diameter and four hose 150 feet in length and the connection is 4 and 8 inches, the number of holes in flanges being eight. There are two barges, one towed and one self propelled, one having the capacity of 8,000 bbls. and the other 4,200 bbls.

The bunkering capacity is 1,000 bbls. per hour. The method of delivery of oil to vessels is by steam and was pumps with 100 feet of hose 6 inches diameter and 175 feet 4 inches diameter. The number of hose in flanges is eight.

At Richmond fuel oil is obtainable from the Standard Oil Co. either at its wharves in the outer harbor or at the barges or at the municipal terminal. At Santa Cruz the Standard Oil Co. and the Shell company have stations on the wharf for supplying fuel oil and gasoline to small boats but there are no facilities there for bunkering vessels.

At Monterey on the city dock there are stations of the Standard Oil and the Shell companies for supplying gasoline to small boats. Bunkering oil can be obtained at the Associated Oil Co. plant at the southeast side of the harbor. Loading is from pipe lines connecting the mooring buoy located off this plant.

TO BUILD TANKER DOCK NEAR OWENSBORO, KY

Building of a dock at the river bank for filling oil tankers on the Ohio River just north of the E. G. Pantie farm, a mile east of Owensboro, Ky., will be started by the Illinois Pipe Line Co. within a few days. The Illinois line traverses the river bank at that point, and it will be merely a matter of making a connection to turn into the tankers, instead of passing the oil off through to the Lawrenceville tanks.

The Illinois Pipe Line Co. has its reservoirs at Doyle Station on the L. H. and St. L. R. R., a short distance south of the point at which it will erect its dockage. The pipe line company will not operate its own tankers, but will sell to refineries at Louisville, who will furnish their own tankers and buy the oil at the dock at the quoted price laid down.

Ellis & Mills will have their dock at the Glenmore Landing on the Ohio River, where their two tanks on the switch of the Glenmore, south of the highway. Both pipe line companies will discharge their cargoes of oil into tanks by gravity.

WIRT FRANKLIN CO. BUYS STATION SITES

The Wirt Franklin Petroleum Corp. of Ardmore, Okla., has acquired sites at Oklahoma City, Duncan, Marlow, Comanche, Lawton and Chickasha, Okla., where bulk and retail stations will be built. The corporation already has extensive marketing facilities in Oklahoma and the new properties are a part of an expansion program which calls for distribution in 42 counties located in the south half of Oklahoma.

The corporation is also making improvements at its Ardmore refinery. These improvements include a new pipe still and towers for the production of gasoline and other light end products.

The refinery and marketing operations are somewhat unique in the Oklahoma industry. All of the gasoline output of the refinery for the past three years has been marketed in southern Oklahoma. The plant's output averages about 1,000,000 gallons of gasoline monthly. The corporation was formed in August of last year through a merger of the properties of the Palacine Oil Co., Cameron Refining Co., Wirt Franklin, Garvin Drilling Co., Walter H. Gant and the Knox Petroleum Co.

MANITOBA GASOLINE PRICES

CHATHAM, Ontario, Mar. 17.—Gasoline prices in Winnipeg and most parts of Manitoba have dropped from 3 cents to 5 cents. Tank wagon prices are quoted at 21 cents for low test and 24 cents for high test gasoline; while service station prices are 28 cents and 31 cents inclusive of government tax. The new prices were initiated by the British American Oil Co., the Prairie Oil Co. and Imperial Oil, Ltd.

Short Talks on Refinery Products

By W. T. Ziegenhain

HOW GAS OIL IS MADE

Gas oil is one of the major products made from crude oil but comparatively little of it finds its way to the market. The greater part is cracked to make gasoline, kerosene and fuel oil. In many cases the yield of gas oil from the crude amounts to 40 per cent and exceeds even the gasoline cut.

The bulk of the yield is obtained as a straight distillation product taken direct from crude oil during the process of distilling off gasoline, kerosene, distillates, gas oil, lubricating stock and finally concentrating the residue as a fuel oil or cylinder stock. Gas oil made in this way is usually straw colored and transparent in a 4-ounce bottle.

It will have a comparatively high cold test and may have a low or high flash point, depending upon the thoroughness of the separation. If the gas oil is to be used for cracking, it is immaterial whether the separation is efficiently done, but if it is to be offered as a furnace oil it usually includes a portion of the lighter fractions to give it a low flash to facilitate easy lighting when used in automatically operated furnaces.

Another common source of gas oil results from cracking still operations. When fuel oil or gas oil is charged to a cracking still a portion of it passes through without being broken up into gasoline. The paraffin wax which is present in the gas oil cracks more readily and in effect removes the wax from the gas oil and the resultant product has a lower cold test. This fact, coupled with the actual production of gas oil within the cracking unit through the polymerization of unstable lighter compounds, yields a gas oil with a low cold test, sometimes identified as "recycled gas oil."

This name is given to cracked gas oil because it may be put back through the cracking stills or recycled. It is not as good as the raw gas oil for cracking purposes but a refiner who has sufficient cracking capacity can better afford to recycle this than purchase outside supplies and pay the freight. On the other hand, consumers are anxious to get a low cold test gas oil and pay a premium for it during the cold winter months for use in household burners and in large burner installations.

In addition to these two major sources, gas oil is made as a by-product of lubricating oils and other major products so that it is usually considered an inferior product, meeting only a rather wide range of specifications. Since it is not necessary to meet rigid specifications it carries but a small procesisng cost. It is not treated except when an odorless furnace oil is wanted and is seldom processed beyond the initial distillation during which it is separated from the crude.

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Foreign Cracking Facilities Expand

Steady Increase in Number of American Units at Foreign Refineries. Other Improvements in Operation Being Made

By C. O. Willson

Manufacturers of equipment and supplies in United States and those responsible for the perfection of special processes are benefiting from the steady expansion of refining facilities in other countries, according to those closely in touch with the foreign industry. This growth in foreign refineries was one of the most important developments of the past year of great significance to the petroleum industry generally.

It is said that foreign refining industry considered as a unit has had a greater growth during the past two years than during the remainder of the post-war period. As economic conditions in foreign countries have become more stabilized the necessary capital has become available not only for the rehabilitation of the old refineries but also for the construction of new plants in important consuming centers. The outstanding example of the latter development has been the rapid growth of petroleum refining in Great Britain during the past few years.

Another contributing factor has been the increased crude oil production available from South America, Russia and some of the other foreign fields. Larger refining facilities have been necessary to handle this increased production and this growth has been largely at plants to which the crude supplies are readily available.

This larger capacity at foreign refineries has obviously tended to restrict the export outlets for plants in this country. Fortunately for all concerned the consumption of petroleum products in foreign countries has also increased steadily so that the market reaction in this country has not been so noticeable as would have been the case had the demand been stationary.

Regardless of the ultimate effect on the refinery operators in this country those who have developed the intricate equipment which is characteristic of the modern plant in the United States are benefiting in the improvement and enlargement programs of foreign operators and no doubt will continue to do so in the future.

Foreign Situation

Due to their inactivity over a period of several years many of the foreign operators found that they did not have the necessary personnel or the equipment for the installation of up-to-date equipment when they decided to modernize their plants or build new refineries capable of competing with the highly efficient American industry. A great deal of research work has been constantly carried on by European scientists directly or indirectly pertaining to the manufacture of petroleum products. This work, however, has been largely along theoretical rather than practical lines as in the American industry where the emphasis has been placed on the commercial development of refinery processes.

Profiting by the experience of numerous installations in this country the manufacturers and owners of processes in this country have been able to offer foreign refiners the equipment needed in their plants with the assurance that properly installed and operated it would give satisfactory results. This equipment includes everything from the boiler house to that used in the compounding of lubricating oils. Tanks of all kinds, pipe stills, towers, heat exchangers and the necessary accessory materials are included in the list of equipment furnished.

Cracking Processes

Probably the most important contribution of the manufacturers of this country to foreign refining during the past two years has been the cracking processes. Foreign refiners, like the operators in this country, were slow in adopting equipment to increase their yields of light end products. However, once the start was made by a few companies others have been quick to fall in line. This has furnished a fertile field for the American companies who manufacture the special materials which are a part of the modern cracking unit. This business has been especially acceptable during the past year, a period during which the American industry has been relatively quiet, due to adverse market conditions.

The Universal Oil Products Co., owners of the Dubbs process, and the M. W. Kellogg Co., owners of the Cross process, are the two concerns in the United States which have been most active in bringing about the installation of their processes at foreign refineries. Several of the other American processes have one or more installations at foreign refineries but for the most part they have centered their activities or are expanding their operations at plants located in the United States.

Units of the Jenkins cracking process have been installed at the Tokyo, Japan, refinery of the Ogura Oil Co., and the Toronto, Canada, refinery of McColl Brothers, Ltd.

The accompanying tables gives an up-to-date list of the Cross and Dubbs units at foreign refineries. The list of Cross installations includes those under construction.

CRACKING OPERATIONS AT FOREIGN REFINERIES

Company, Location	Operating Plants Units	Operating Plants Capacity	Plants Under Construction Units	Plants Under Construction Capacity
Dubbs Installations				
Anglo-Persian Oil Co., Llandarcy, Wales	1	1,500	..	....
Aquila Franco Romana, Ploesti, Rumania	..	....	1	1,000
Astra Romana, Ploesti, Rumania	1	800	..	....
British American Oil Ref. Co., Ltd., Toronto, Ontario	1	1,200	..	....
Burmah Oil Co., Rangoon, India	..	....	1	1,500
Curacaische Pet. Ind. Maat, Curacao, D. W. I.	2	2,000	4	4,000
DeBataafsche Pet. Maat., Balik Papan, Borneo	2	1,600	8	8,000
DeBataafsche Pet. Maat., Tjepoe, Java, D. E. I.	..	....	1	1,000
John Fell Co., Ltd., Sydney, Australia	1	1,000	..	....
Nippon O'l Co., Yohohama, Japan	2	1,600	..	....
Ominum Internat'onal Petroles, Cernavoda, Rumania	1	1,000	..	....
Steaua Romana, Campina, Rumania	2	3,000	..	....
Trinidad Leaseholds, Pointe-a-Pierre, B. W. I.	2	2,000	..	....
Cross Installations				
Royal Dutch-Shell Co., Curacao, West Indies	2	2,000	..	....
British Burmah Oil Co., Rangoon, India	2	2,000	..	....
British American Oil Co., Toronto, Canada	1	1,000	..	....
Cory Bros., Coryton, England	2	2,000	..	....
Medway Oil & Storage Co., Isle of Grain, England	2	2,000	..	....
Argentine Government, LaPlata, Argentine	2	2,000	..	....
Vacuum Oil Co., Dzledzice, Poland	1	1,000	..	....
Nippon O l Co., Niigata, Japan	1	1,000	..	....
Anglo-Persian Oil Co., Llandarcy, England	2	2,000	..	....
Cia Ferrocarrilera de Petroleo, Rivadavia, Argentina	*1	1,000	..	....
Galicia Naphtha Co., Drohobycz, Poland	1	1,000	..	....
Standard Oil Co. of New Jersey, Fawley, England	*2	4,000	..	....
Standard Oil Co. of New Jersey, Bahia Blanca, Argentine	*1	1,000	..	....

*Latest type hot oil recirculating units. Capacities shown represent fresh feed per stream day.

Installations Scattered

It will be noted that the installations of both processes are widely scattered, indicating that the trend toward improved operations is not confined to any particular section of the foreign industry. A check made of the crude oil run to stills of these refineries showed that every important field of the petroleum industry was represented. In several cases the operations of these refineries had been confined to a simple topping operation with old shell stills and antiquated equipment for the refining of lubricating oils. Cases are cited where the installation of the cracking processes has accompanied the building of new pipe stills for the skimming operations.

Of special interest to the refining industry in the United States has been the growth of refining of Great Britain and other European countries. These plants are now absorbing large quantities of South American crude oils. Reports for the past year show a large drop in the American exports of gasoline to Great Britain and this situation is readily understood when the expansion in cracking facilities is explained.

(Continued on Page 159)

Suggest New Basis for Contracts

Agreements Between Refiners, Jobbers and Distributors Based on Percentage Would Tend to Eliminate Marketing Ills

By E. P. Angus*

At the present time the only recognized market on gasoline is that current price which is obtained for gasoline in tank car lots f.o.b. refinery points particularly, and in cargo lots at seaboard. The percentage of the volume of the total gasoline consumption in the States handled by distributors owning refineries, is not known, but it is understood to be quite a large percentage of the total. The market on that portion of the gasoline is not based so much on the current tank car price at refinery points, since sale of this gasoline from the original owner is on a tank wagon basis, and a certain per cent of the gasoline sold by refiners to nonrefining jobbers is on a basis of so much under the prevailing tank wagon market at points of destination. The present tank car market, therefore, is based largely on current sales of spot shipments on a comparatively small part of the total gasoline output.

Under the present general plan of marketing gasoline, in most localities there is a certain definite spread between the tank wagon price and the service station, or retail price—in some localities it is 2 cents, in some 3 cents, in some 4 cents, and as high as 6 cents. This spread often continues, regardless of any advance or decline in the market price, whether it be tank car, tank wagon or service station. Many nonrefining jobbers purchasing through brokers, or direct from the refining companies, purchase under some kind of guaranteed or marginal contract, which margin between delivered cost to the jobber and the current tank wagon price, remains the same, whether it be 3, 4 or 4½ cents, irrespective of advance or decline in either tank wagon or service station retail prices.

Under this plan of marketing, there is no incentive to the dealer who buys from tank wagon or the jobber who buys in tank cars, to uphold a reasonable and profitable price, so that the refiner, the jobber or the distributor will also be able to secure a reasonable profit. Many cases in recent years have developed where under a guaranteed margin, whether it be to the dealer or the jobber purchasing in tank cars, resulted in a net back to the refining company 1 to 4 cents under what may be regarded as the tank car market.

It is recognized that many men are thinking on the subject of some plan that will assist, or be helpful, in remedying some of the present and recent past problems of the industry. It is not likely that any plan can be suggested, or adopted, that will cure all of the ills. There is too much varied interests for the industry to take up and adopt any particular plan for basing a market, but it is obvious that some movement should be made in a direction which would work in a practical way to eliminate some of the causes of the unnecessary and unbusinesslike local price fluctuations. To that end, the following plan is offered, merely to be considered and studied with a view of forming a definite sentiment toward some action that will tend to improve the present (and past) difficulties.

The plan is that the distributor, whether he makes his own gasoline or purchases from other refineries in tank car lots should maintain a retail price on his product, and that price be considered, exclusive of the excise or other tax; that the sales then made to the dealer should be billed at retail price less a certain per cent discount. For practical illustration, we will say that the distributor's retail price today is 15 cents plus tax, and his discount to his dealer is 20 per cent, the dealer's discount in this case would be 3 cents, which is approximately the average over the country today. If the distributor's schedule should be advanced to 17 cents plus tax, based on advance of crude or otherwise, then the 20 per cent would equal 3.4 cents spread for his dealer. On the other hand, if the schedule is reduced to 12 cents, the 20 per cent would equal 2.40 cents per gallon; if reduced to 10 cents, the dealer's gross margin would be 2 cents; if the retail price advanced to 20 cents, the spread would be 4 cents to the dealer. In this way there would be an incentive for the dealer to rather encourage the maintenance of a reasonably profitable market for the distributor or the refiner. If the dealer was inclined to cut retail prices and his competitive dealers were to follow his lead, they would all find, under this plan, a lessening of their margin.

Refiner-Jobber Basis

Carrying this plan further, if the refinery selling to the jobber in a particular locality were to take the prevailing retail price in that locality as his selling price and deliver the gasoline in tank cars, and

*Mr. Angus is acting general sales manager of the Magnolia Petroleum Co. The suggestions contained in this article are his personal views.

The Longest natural gasoline pipe line in the WEST
100 MILES of 4-inch and 6-inch
American Seamless Slip-Joint Line Pipe
The 100-mile natural gasoline transmission line, built by the Shell Company of California and extending from its plant in Ventura, California, to the refinery at Wilmington, is a significant tribute to American Seamless Slip-Joint Line Pipe.
The line consists of 85 miles of 4-inch pipe, the balance being 6-inch. Joints average 40-feet in length, giving an economical welding total. The lightness of the pipe facilitated speedy handling throughout. No difficulty was experienced in welding the high carbon steel.
Two mountain ranges were crossed with this line: one at Santa Susana Pass, elevation 1,650 feet; and the Santa Monica Mountains, elevation 1,300 feet. Some idea of the difficulties encountered may be gained by reference to the illustrations, and the profile of the line, reproduced here.
AMERICAN SEAMLESS TUBE CORP. OF CALIFORNIA
When this Line Was Built the Best Pipe Was Essential

Shell Oil's new 100 Mile gasoline pipe line insures against corrosion

30 MILE SECTION IN WORST SOIL PROTECTED WITH BITURINE ENAMEL

From Ventura, California, to the refinery at Wilmington—nearly 100 miles—runs the Shell Oil Company's new natural gasoline pipe line. Laid in a variety of soils, some highly corrosive, it is significant to note that the 30 mile section laid in the worst soil was protected with Biturine Enamel—the permanent corrosion preventive.

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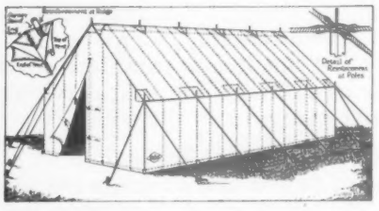

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instead of guaranteeing a 3 cents or 4 cents margin under current tank wagon prices, he were to allow his jobber a discount of 20 per cent and 25 per cent under the prevailing retail price exclusive of tax, then under a 20-cent retail price, the dealer would get 4 cents, the jobber would get the same 20 per cent plus an additional 25 per cent, equalling 4 cents under the dealer's price, or a total of 8 cents under the 20-cent retail price, and would net the refinery 12 cents delivered. If the retail price was 15 cents, the first discount 20 per cent, equalling 3 cents, the second discount of 25 per cent would equal 3 cents, and the refiner would get 9 cents for his product delivered in tank cars; then if the retail price was 10 cents, the dealer's 20 per cent would equal 2 cents, the additional 25 per cent to the jobber would equal 2 cents, and the refiner would get 6 cents. In this same 10-cent retail schedule, if the present margins were guaranteed, i.e., the dealer 3 cents and the jobber 4 cents, the refiner would only get 3 cents delivered, which, after deducting freight, may leave him 1½ cents or 2 cents. These discounts are merely used to indicate the principle of the percentage basis of dis-

(Continued on Page 156)

RESULT OF DISTILLATION TESTS OF REPRESENTATIVE WEST TEXAS CRUDE

Texas, Big Lake Field, Reagan County; composite sample; sand, Permian lime; depth, 2,900-3,100 feet; specific gravity, 0.834; A.P.I. gravity, 38.2 degrees; per cent sulphur, 0.36; per cent water, nil; Saybolt Universal viscosity at 70 degrees Fahrenheit, 47 sec.; pour point, below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 41 sec.; color, green.

DISTILLATION, BUREAU OF MINES, HEMPEL METHOD

Air distillation; barometer, 746 mm.; first drop, 29°C. (84°F.)

Temperature Degrees Centigrade	Per Cent Cut	Sum per Cent	Specific Gravity Cut	Degrees A.P.I. Cut	Viscosity at 100°F.	Cloud Test, °F.	Temperature Degrees Fahrenheit
Up to 50	2.1	2.1	....	....	....	....	Up to 122
50- 75	2.3	4.4	0.668	80.3	....	....	122-167
75-100	5.5	9.9	.705	69.2	....	....	167-212
100-125	7.4	17.3	.738	60.2	....	....	212-257
125-150	6.3	23.6	.758	55.2	....	....	257-302
150-175	4.6	28.1	.779	50.1	....	....	302-347
175-200	4.7	32.8	.795	46.5	....	....	347-392
200-225	4.5	37.3	.811	43.0	....	....	392-437
225-250	5.3	42.6	.825	40.0	....	....	437-482
250-275	5.0	47.6	.835	38.0	....	....	482-527
Vacuum distillation at 40 mm.							
Up to 200	5.1	5.1	.855	34.0	41	5	Up to 392
200-225	5.8	10.9	.861	32.8	48	30	392-437
225-250	5.1	16.0	.870	31.1	66	50	437-482
250-275	4.1	20.1	.886	28.2	105	70	482-527
275-300	6.1	26.2	.897	26.3	200	90	527-572

Residuum, 24.9 per cent; distillation loss, 1.3 per cent; carbon residue of residuum, 4.4 per cent; carbon residue of crude, 1.1 per cent.

APPROXIMATE SUMMARY

	Per Cent	Spec. Gravity	°A.P.I.	Viscosity
Light gasoline	9.9	0.689	73.9	.....
Total gasoline and naphtha	32.8	.741	59.5	.....
Kerosene distillate	9.8	.819	41.3	.....
Gas oil	13.7	.849	35.2	.....
Nonviscous lubricating distillate	8.8	.862-.884	32.7-28.6	50-100
Medium lubricating distillate	5.7	.884-.897	28.6-26.3	100-200
Viscous lubricating distillate	3.0	.897-.904	26.3-25.0	Above 200
Residuum	24.9	.940	19.0	.....
Distillation loss	1.3	.....	.....	.....

Texas, Church & Fields Field; Crane-Upton Counties; composite sample; sand, Permian lime; depth, 2,900-3,200 feet; specific gravity, 0.870; A.P.I. gravity, 31.1 degrees; per cent sulphur, 2.69; per cent water, nil; Saybolt Universal viscosity at 70 degrees Fahrenheit, 69 sec.; pour point, below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 50 sec.; color, greenish black.

DISTILLATION, BUREAU OF MINES, HEMPEL METHOD

Air distillation; barometer, 746 mm.; first drop, 30°C. (86°F.)

Temperature Degrees Centigrade	Per Cent Cut	Sum per Cent	Specific Gravity Cut	Degrees A.P.I. Cut	Viscosity at 100°F.	Cloud Test, °F.	Temperature Degrees Fahrenheit
Up to 50	1.2	1.2	....	....	....	....	Up to 122
50- 75	2.1	3.3	0.681	76.3	....	....	122-167
75-100	3.6	6.9	.711	67.5	....	....	167-212
100-125	6.1	13.0	.742	59.2	....	....	212-257
125-150	6.2	19.2	.767	53.0	....	....	257-302
150-175	3.8	23.0	.782	49.5	....	....	302-347
175-200	3.8	26.8	.796	46.3	....	....	347-392
200-225	4.6	31.4	.811	43.0	....	....	392-437
225-250	5.2	36.6	.825	40.0	....	....	437-482
250-275	6.9	43.5	.840	37.0	....	....	482-527
Vacuum distillation at 40 mm.							
Up to 200	4.6	4.6	.865	32.1	40	10	Up to 392
200-225	5.6	10.2	.875	30.2	47	25	392-437
225-250	6.0	16.2	.890	27.5	62	50	437-482
250-275	5.7	21.9	.903	25.2	100	70	482-527
275-300	5.8	27.7	.910	24.0	180	90	527-572

Residuum, 27.6 per cent; distillation loss, 1.2 per cent; carbon residue of residuum, 12.6 per cent; carbon residue of crude, 3.3 per cent.

APPROXIMATE SUMMARY

	Per Cent	Spec. Gravity	°A.P.I.	Viscosity
Light gasoline	6.9	0.697	71.5	.....
Total gasoline and naphtha	26.8	.749	57.4	.....
Kerosene distillate	9.8	.818	41.5	.....
Gas oil	15.6	.856	33.8	.....
Nonviscous lubricating distillate	10.4	.878-.903	29.7-25.2	50-100
Medium lubricating distillate	7.2	.903-.912	25.2-23.7	100-200
Viscous lubricating distillate	1.4	.912-.914	23.7-23.3	Above 200
Residuum	27.6	.982	12.6	.....
Distillation loss	1.2	.....	.....	.....

Texas, McCamey Field, Upton County; composite sample; sand, Permian lime; depth, 1,800-2,300 feet; specific gravity, 0.901; A.P.I. gravity, 25.6 degrees Fahrenheit; per cent sulphur, 2.23; per cent water, 0.8; Saybolt Universal viscosity at 70 degrees Fahrenheit, 200 sec.; pour point, below 5 degrees Fahrenheit; Saybolt Universal viscosity at 100 degrees Fahrenheit, 104 sec.; color, greenish black.

DISTILLATION, BUREAU OF MINES, HEMPEL METHOD

Air distillation; barometer, 746 mm.; first drop, 70°C. (158°F.)

Temperature Degrees Centigrade	Per Cent Cut	Sum per Cent	Specific Gravity Cut	Degrees A.P.I. Cut	Viscosity at 100°F.	Cloud Test, °F.	Temperature Degrees Fahrenheit
Up to 50	....	....	....	....	....	....	Up to 122
50- 75	0.6	0.6	....	....	....	....	122-167
75-100	2.1	2.7	0.696	71.8	....	....	167-212
100-125	1.9	4.6	.732	61.8	....	....	212-257
125-150	3.6	8.2	.756	55.7	....	....	257-302
150-175	3.9	12.1	.779	50.1	....	....	302-347
175-200	3.7	15.8	.799	45.6	....	....	347-392
200-225	4.0	19.8	.818	41.5	....	....	392-437
225-250	5.7	25.5	.835	38.0	....	....	437-482
250-275	6.6	32.1	.853	34.4	....	....	482-527
Vacuum distillation at 40 mm.							
Up to 200	5.5	5.5	.881	29.1	43	Below 5	Up to 392
200-225	5.7	11.2	.891	27.3	53	Below 5	392-437
225-250	6.8	18.0	.907	24.5	76	10	437-482
250-275	6.4	24.4	.920	22.3	135	30	482-527
275-300	9.2	33.6	.931	20.5	270	55	527-572

Residuum, 34.1 per cent; distillation loss, 0.2 per cent; carbon residue of residuum, 12.3 per cent; carbon residue of crude, 4.2 per cent.

APPROXIMATE SUMMARY

	Per Cent	Spec. Gravity	°A.P.I.	Viscosity
Light gasoline	2.7	0.696	71.8	.....
Total gasoline and naphtha	15.8	.759	54.9	.....
Kerosene distillate	4.0	.818	41.5	.....
Gas oil	19.2	.858	33.4	.....
Nonviscous lubricating distillate	10.4	.888-.912	27.9-23.7	50-100
Medium lubricating distillate	7.7	.912-.925	23.7-21.5	100-200
Viscous lubricating distillate	8.6	.925-.937	21.5-19.5	Above 200
Residuum	34.1	.989	11.6	.....
Distillation loss	.2	.....	.....	.....

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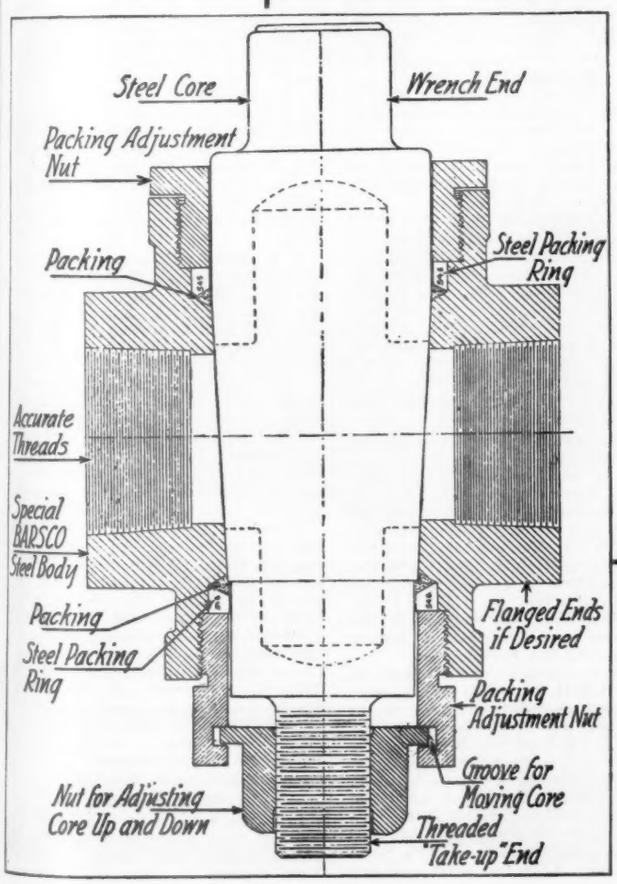

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(8)—Made of special "BARSCO" steel—indestructible.

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A telescoped pipe joint

without fittings—it can be made with

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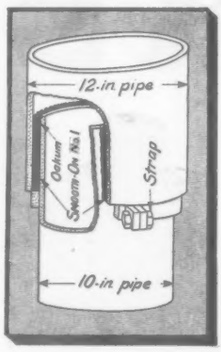

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The sketch indicates how he handled the job. The old packing was torn out, and replaced by Smooth-On No. 1. After placing and tamping this between the two pipes, the filling was reinforced by a strap put around the 10-in. pipe and butted close up against the end of the 12-in. pipe. On hardening of the mass into solid metallic iron, a real joint was produced and the leakage trouble was over. The seal is now and will remain as tight as the pipe walls.

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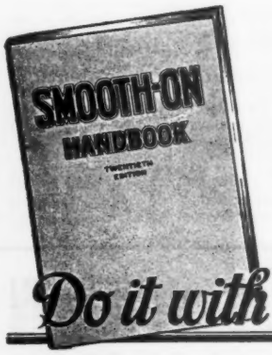

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE FIRST REPORTS

Carson County

Empire Gas & Fuel Co.'s No. 1 J. C. Noel, C of S. of Section 41, Block 4, I.&G.N. Survey. Same company's No. 1 E. W. Sheridan, C of NE of Section 243, Block B-2, H.&G.N. Survey.

Gray County

Gibson Oil Corp.'s No. 1 G. E. Pierce, 330 feet north and west of the SE cor. of Section 149, Block B-2, H.&G.N. Survey. Sullivan and others' No. 1 M. Huselby, 330 feet south and east of the NW cor. of the E half of the NW of Section 55, Block 25, H.&G.N. Survey.

Hutchinson County

Phillips Petroleum Co.'s No. 2 J. M. Sanford J. A. Chap, 330 feet south and west of the NE cor. of the east 80 acres of the south 160 acres of Section 78, Block 46, H.&T.C. Survey. Same company's No. 2 J. M. Sanford Garland, 330 feet north and east of the middle of the west line of the west 80 acres of the south 160 acres of Section 77, Block 46, H.&T.C. Survey. Same company's No. 2 J. M. Sanford-Land, 330 feet south and east of the NW cor. of the east 40 acres of the north 80 acres of the south 320 acres of Section 83, Block 46, H.&T.C. Survey.

Swisher County

Adams & Pritchard's No. 1 Crawford, 330 feet south and 2,310 feet west of the NE cor. of Section 39, Block W-1, T.T. R.R. Survey.

NORTH CENTRAL AND WEST TEXAS FIRST REPORTS

Archer County

Burns and Humble Oil & Refining Co.'s No. 2 L. F. Wilson, 150 feet north and 155 feet east of the SW cor. of Lot No. 231, Geraldine Subdivision. Consolidated Oil Co.'s No. 1 L. F. Wilson, Lot No. 11, 150 feet north and west of the SE cor. of Lot No. 11, Wilson's Geraldine Subdivision. Same company's No. 1 L. F. Wilson, Section 116, 150 feet south and west of the most easterly NE cor. of Section 116, A.T.N.C.L. Survey. Fain-McGaha Oil Corp.'s No. 4 L. F. Wilson-A, 150 feet north and east of the SW cor. of the north 20 acres of Lot No. 27, Wilson's Geraldine Subdivision. Fain-McGaha Oil Corp. and United Production Co.'s No. 2 L. F. Wilson-B, 150 feet north and west of the SE cor. of Lot No. 20, Wilson's Geraldine Subdivision.

Hines and Continental Oil Co.'s No. 1 S. G. Helm, 150 feet south and west of the NE cor. of the east 75 acres of Section "E", Club Ranch Subdivision. D. O. Johnson and others' No. 2 L. F. Wilson-B, 450 feet north and 150 feet west of the SE cor. of Lot No. 19, Wilson's Geraldine Subdivision. H. M. Kelleher and others' No. 1 E. J. Netherton, 150 feet south and east of the NW cor. of the S half of the SE of Section 111, T. B. Bell Survey, A-31.

Sam Kruger and others' No. 2 W. F. Parrish, 150 feet south and east of the NW cor. of Lot No. 234, Geraldine Subdivision. Riner & Bailey's No. 1 L. F. Wilson, Section 101, 1,890 feet north and 1,628 feet east of the SW cor. of Section 101, A.T.N.C.L. Survey, being 615 feet north and 1,628 feet east of the SW cor. of their 85.69-acre lease. The Texas Company and others' No. 1 J. H. Turbeville-C (key well), 988 feet south and 5 feet west of the NE cor. of Section 172, Robert Carson Survey.

The Texas Company and Marland Oil Co.'s No. 1 J. H. Turbeville-C (key well), 5 feet south and 301 feet east of the SW cor. of The Texas Company's "C" lease out of Section 172, Robert Carson Survey, and located on the Marland Oil Co.'s lease. Madden & Hunt's No. 1 E. Bearden, 170 feet north and 1,320 feet west of the SE cor. of the E. Bearden 61.5-acre tract out of the B.B.B.&C. Survey, A-54. The Texas Company's No. 1 W. C. Young, 1,170 feet north and east of the SW cor. of Section 2, Hooper & Wade Survey, A-1,118.

Brown County

Blanchard & Davis and others' No. 1 A. L. Curry, 1,200 feet south and 2,100 feet east of the NW cor. of the J. Kinney Survey No. 624, being 150 feet north and 190 feet east of the SW cor. of their 33-acre lease. Clark-Buffalo Oil Co.'s No. 4 Brown County fee land, 2,850 feet south and 2,000 feet east of the NW cor. of the James Kinney Survey No. 624. Gilman & McMurray's No. 4 Roy Hickman, 150 feet north and 760 feet east of the SW cor. of their lease out of the T. Benson Survey No. 783. Henshaw Oil Corp.'s No. 2 P. U. Bush, 2,650 feet south and 1,600 feet east of the NW cor. of the James Kinney Survey No. 624, being 450 feet south and 150 feet west of the NE cor. of their 77-acre lease.

F. Kelsey and others' No. 1 J. F. Mansfield, 2,770 feet south and 1,300 feet east of the NW cor. of the Frederick Furlonge Survey No. 653. Kone Production Co.'s No. 10 Roy Hickman, 3,450 feet south and 2,500 feet east of the NW cor. of the T. Benson Survey No. 783, being 150 feet south and east of the most northerly NW cor. of their lease. Midland Oil Co.'s No. 1 G. T. Butler, 150 feet north and west of the SE cor. of the G. T. Butler 215.68-acre tract out of the T. Benson Survey No. 783. G. P. Mitcham's No. 2 A. E. Keeler, 500 feet south and 150 feet east of the NW cor. of the east 50 acres of the north 100 acres of the A. E. Keller 391-acre tract out of the J. Kinney Survey No. 624.

Pandem Oil Corp.'s No. 5 A. D. Hutton-A, 150 feet north and 470 feet east of the SW cor. of the north 20 acres of the west 40 acres of the north 80 acres of the J. A. Nobles Survey, A-1,947. Peckham and others' No. 1 J. W. Newton, 3,450 feet north and 3,400 feet west of the SE cor. of the R. Honeycutt Survey No. 623, being 150 feet south and east of the NW cor. of Lot No. 15. M. L. Richards' No. 4 A. L. Curry, 483 feet south and 150 feet east of the NW cor. of the A. L. Curry 160-acre tract out of the E. L. Betts Survey, A-70. Same company's No. 2 A. D. Hutton, 150 feet south and 470 feet east of the NW cor. of the south 20 acres of the west 40 acres of the north 80 acres of the J. A. Nobles Survey, A-1,947. Same company's No. 3 A. D. Hutton, 150 feet south and 170 feet east of the NW cor. of the south 20 acres of the west 40 acres of the north 80 acres of the J. A. Nobles Survey, A-1,947.

J. L. Smith and others' No. 1 J. H. Brown, 150 feet north and west of the SE cor. of the J. Coffey Survey, A-1,471. The Texas Company's No. 25 Roy Hickman, 150 feet south and 372 feet east of the NW cor. of their lease out of the T. Benson Survey No. 783. Same company's No. 26 Roy Hickman, 450 feet south and 73 feet east of the NW cor. of their lease out of the T. Benson Survey No. 783. Calcasieu Oil Co.'s No. 1 Sim Whitted, 1,400 feet northeast of the southwest line and 150 feet northwest of the southeast line of the Isaac Allen Survey.

Inland Oil Co.'s No. 1 M. E. Linton, 150 feet northeast of the southwest line and 150 feet northwest of the southeast line of the M. E. Linton 73-acre tract out of the William Viser Survey. Pannuco Oil Co.'s No. 1 W. H. Simmons, 1,100 feet northeast of the southwest line and 3,600 feet northwest of the southeast line of the Willis Davenport Survey No. 287. W. L. Spence and others' No. 1 C. Jacobs, 450 feet northeast of the southwest line and 150 feet northwest of the northwest line of the Reuben Ross Survey No. 44, and located in the Kerr County School Lands No. 277.

Callahan County

L. G. Bradstreet's No. 5 J. H. Waller, 450 feet south and east of the NW cor. of his 40-acre lease out of the G. M. Vigal Survey No. 798. O. P. Deener's

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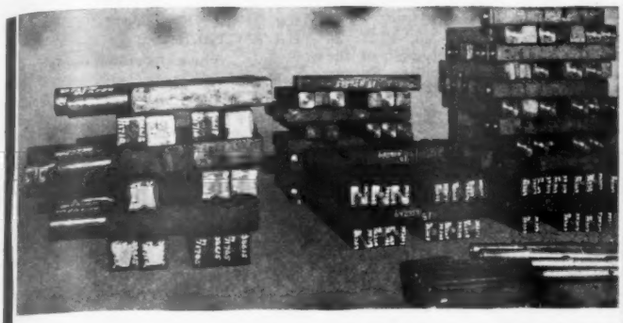

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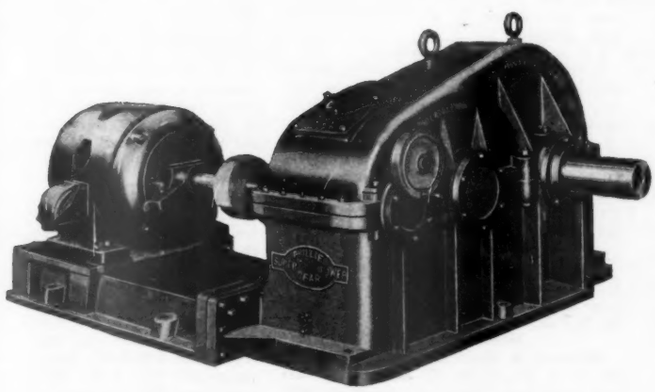

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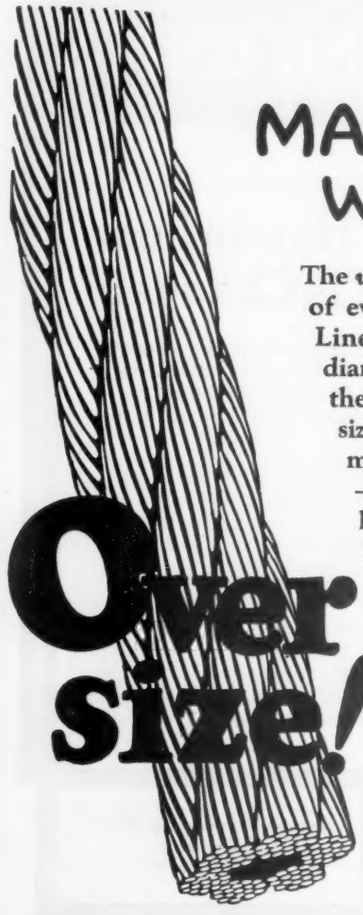

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No. 1 R. MacDonald, 150 feet south and west of the NE cor. of the SE of the SW of Section 113, B.B.B.&C. Survey. Manhattan Oil Co.'s No. 1 T. H. Smart, 450 feet south and 830 feet west of the NE cor. of the W. T. Lassiter Survey.

Coleman County

Dallas Petroleum Co.'s No. 1 H. B. Wilson, 500 feet south and west of the NE cor. of the William Woolsey Survey No. 294. A. R. Forster and others' No. 2 C. L. Davenport, 537 feet north and west of the SE cor. of the C. L. Davenport 404-acre tract out of the W. T. Dunlavy Survey No. 259. Same company's No. 2 Ruth Godwin, 150 feet south and east of the NW cor. of Lot No. 1, W. T. Dunlavy Survey No. 259.

Jackson & Veihl's No. 1 Ralph Davis, 1,320 feet south and 660 feet west of the NE cor. of the G. W. Morgan Survey No. 309. Roth & Faurot's No. 2 J. E. and T. L. Stevens, 330 feet south and 775 feet east of the NW cor. of the J. E. and T. L. Stevens 231-acre tract out of the Coleman County School Land No. 57. S. J. Taylor and others' No. 1 Upton Henderson, 2,520 feet north and 1,320 feet west of the SE cor. of the Upton Henderson 326.5-acre tract out of the Hamilton Kegans Survey No. 498.

Gunn Production Co.'s No. 1 Mrs. B. J. Shelton, 2,000 feet north and 150 feet west of the SE cor. of the Mrs. B. J Shelton 368-acre tract out of the James Henderson Survey No. 364. Mexana Oil Co.'s No. 1 S. H. Duggins, 150 feet south and west of the NE cor. of the south 80 acres of the east 160 acres of the S. H. Duggins 484-acre tract out of the Mary Ann Fisk Survey No. 630. The Texas Company's No. 1 J. T. Vance, 330 feet north and west of the SE cor. of the SW of Section 101, E.T.R.R. Survey.

Cooke County

Fain-McGaha Oil Corp.'s No. 2 J. W. Chaffin, 150 feet north and west of the NW cor. of the W. C. Davis Survey, A-308, and located in the E. Reed Survey, A-849.

Concho County

C. R. Dutton and Hughes Drilling Co.'s No. 1 W. O. Shultz, 1,500 feet north and west of the SE cor. of the NW of Section 127, Block 72, T.&N.O.R.R. Survey.

Crane County

Lockhart and others' No. 1 M. M. Treanor, 3,660 feet northeast of the west corner and 990 feet southeast of the nortwest line of Section 28, and located in Section 28, Block 1, H.&T.C. Survey. Gulf Production Co.'s No. 49 J. T. McElroy, 1,442 feet south and 990 feet west of the NE cor. of their lease out of Section 201, Block F, C.C.S.D.&R.G.N.R. R.R. Survey.

Haskell County

S. S. Kouri's No. 2 Reynolds Cattle Co., 300 feet south and east of the NW cor. of the SE of Section 3, E.T.R.R. Survey, A-129.

Howard County

F. H. E. Oil Co.'s No. 2 Dora Roberts-D, 250 feet north and 200 feet west of the SE cor. of the south 80 acres of the NW of Section 136, Block 29, W.&N.W. R.R. Survey.

Jones County

Midwest Exploration Co.'s No. 1 Sarah L. Phillips, 330 feet north and 2,310 feet west of the SE cor. of Section 16, Block 19, T.P.R.R. Survey.

Montague County

Bridwell & Heydrick and Continental Oil Co.'s No. 5 H. C. McGaughy, 300 feet north and 1,144 feet east of the SW cor. of the C. Chacon Survey, A-143. Oil Operators Trust Co.'s No. 5 E. J. Bouldin, 1,026 feet north and 1,549 feet east of the SW cor. of the C. Chacon Survey, A-140.

Pecos County

The California Co.'s No. 2 M. A. Smith, Lease 1, 2,602 feet north and 330 feet west of the SE cor. of Section 37, Block 194, G.C.&S.F. Survey. Ditto Oil Co.'s No. 1 J. M. Montgomery, 250 feet south and 160 feet west of the NE cor. of Section 104, Block 331, A-6,387.

Runnels County

Vacuum Oil Co. and others' No. 1 J. S. Flanagan, 750 feet south and east of the NW cor. of Lot No. 29, Domingo Diaz Survey No. 532. Vacuum Oil Co. and Owenwood Oil Co.'s No. 1 H. B. Fowler, 1,563 feet north and 250 feet west of the SE cor. of Lot No. 29, Domingo Diaz Survey No. 532.

Sutton County

J. D. Nantz and others' No. 1 G. Allison, C of NE of Section 29, Block B, H.E.&W.T.R.R. Survey.

Throckmorton County

E. J. McCurdy and others' No. 1 Reynolds Cattle Co., 610 feet south and 2,180 feet west of the NE cor. of the N half of the SE of Section 19, Block 2, A.B.&M. Survey, A-5.

Upton County

Snowden & McSweeney's No. 2 R. S. Hughes, 1,090 feet north and 1,050 feet west of the SW cor. of Section 9, Block 3½, C.C.S.D.&R.G.N.G.R.R. Survey, being 990 feet south and 330 feet east of the NW cor. of their 80-acre lease out of the William Teer Survey No. 4, A-806.

Ward County

Estex Oil Co.'s No. 1 W. A. Estes, 2,640 feet south and 150 feet west of the NE cor. of Section 4, Block 29, Public School Land. Great Basin Oil Co.'s No. 1 Ameria G. Davis, 2,400 feet northeast of the west corner and 1,350 feet southeast of the northwest line of Section 32, Block 1, H.&T.C. Survey.

Wichita County

Bleakley & Kinnison's No. 8 Mrs. Jeanette Rexford, 450 feet south and 650 feet west of the NE cor. of Section 2, C.T.R.R. Survey, A-395. T. M. Conrey's No. 1 H. Willis, 1,800 feet north and 1,150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 2 H. Willis, 1,470 feet north and 1,150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 3 H. Willis, 1,800 feet north and 810 feet east of the SW cor. of the B.B.B.&C. Survey, A-29.

Same company's No. 4 H. Willis, 1,470 feet north and 810 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 5 H. Willis, 1,140 feet north and 1,150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 6 H. Willis, 810 feet north and 1,150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same sompany's No. 7 H. Willis, 1,140 feet north and 810 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Some company's No. 8 H. Willis, 1,800 feet north and 490 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 9 H. Willis, 1,800 feet north and 150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 10 H. Willis, 1,470 feet north and 490 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 11 H. Willis, 1,470 feet north and 150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 12 H. Willis, 650 feet north and 650 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Grayce Oil Co.'s No. 12 S. M. Daniel, 150 feet north and west of the SE cor. of the H. Hastie Survey, A-99.

Magnolia Petroleum Co.'s No. 138 H. Reilly, 2,900 feet south and 325 feet west of the most northerly NE cor. of the L. C. Denison Survey, A-55. Willis & Crabtree's No. 1 H. Willis, 2,400 feet north and 810 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 2 H. Willis, 2,300 feet north and 1,100 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 3 H. Willis, 2,250 feet north and 525 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 4 H. Willis, 2,100 feet north and 150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 5 H. Willis, 2,100 feet north and 810 feet east of the SW cor. of the B.B.B.&C. Survey, A-29. Same company's No. 6 H. Willis, 2,125 feet north and 150 feet east of the SW cor. of the B.B.B.&C. Survey, A-29.

Coleman & Cappock's No. 5 Kemp & Kempner, 1,407 feet south and 150 feet west of the NE cor. of Block 82, Kemp's Wichita Valley Land, being 142 feet north and 150 feet west of the SE cor. of their 25.66-acre lease. Same company's No. 7 Kemp & Kempner, Lot No. 4, 718 feet north and 400 feet west of the SE

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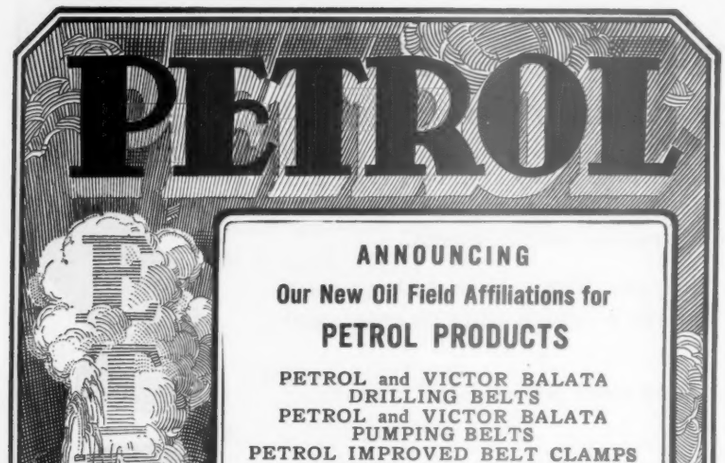
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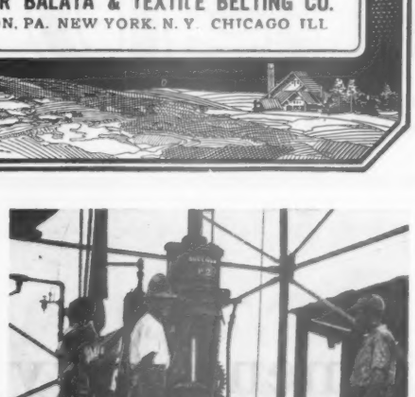

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cor. of Block 82, Kemp's Wichita Valley Land. W. H. Hammon and others' No. 1 State Land, 1,025 feet south and 1,825 feet west of the NE cor. of the W. R. Eaves Survey, A-447, and located in the bed of the Wichita River. Holbrook & Wood's No. 16 Kemp & Kempner, 1,696 feet south and 150 feet west of the NE cor. of Block 82, Kemp's Wichita Valley Land, being 150 feet south and west of the most easterly NE cor. of their lease.

Kimmell and others' No. 1 Etheridge & McCormick, 3,100 feet south and 1,300 feet west of the NE cor. of Section 13, H.&G.N. Survey, A-146. Magnolia Petroleum Co.'s No. 11 J. A. Watkins-A, 250 feet south and 150 feet west of the NE cor. of their 40-acre "A" lease out of Block 46, Kemp's Wichita Valley Land. Vergate Oil Co.'s No. 4 Deep, J. A. Watkins, 1,550 feet north and 150 feet east of the SW cor. of Block 46, Kemp's Wichita Valley Land.

Wilbarger County

Fain-McGaha Oil Corp.'s No. 2 W. T. Waggoner-O, 205 feet north and 805 feet west of the SE cor. of the NW of the NW of Section 50, Block 4, T.&T.C. Survey.

Winkler County

Atlantic Oil Producing Co.'s No. 7 Grisham-Hunter, 1,650 feet north and 2,310 feet east of the SW cor. of Section 34, Block B 5, School Land. Same company's No. 8 Grisham-Hunter, 990 feet north and 2,310 feet east of the SW cor. of Section 34, Block B-5, School Land. Atlantic Oil Producing Co. and Collett's No. 4 T. G. Hendrick-F, 330 feet south and 2,310 feet east of the NW cor. of Section 40, Block 26, School Land. Humble Oil & Refining Co.'s No. 12 Grisham-Hunter, 2,310 feet south and 1,650 feet west of the NE cor. of Section 34, Block B 5, School Land. Same company's No. 13 Grisham-Hunter, 2,310 feet south and 990 feet west of the NE cor. of Section 34, Block B 5, School Land.

Pure Oil Co.'s No. 7 Grisham-Hunter-B, 990 feet north and 330 feet west of the SE cor. of Section 34, Block B-5, School Land. Same company's No. 8 Grisham-Hunter-B, 1,650 feet north and 330 feet west of the SE cor. of Section 34, Block B-5, School Land. Same company's No. 9 Grisham-Hunter-B, 2,310 feet north and 990 feet west of the SE cor. of Section 34, Block B-5, School Land. Same company's No. 10 Grisham-Hunter-B, 2,310 feet north and 1,650 feet west of the SE cor. of Section 34, Block B-5, School Land. Same company's No. 11 Grisham-Hunter-B, 1,650 feet north and 2,310 feet west of the SE cor. of Section 34, Block B-5, School Land. Same company's No. 12 Grisham-Hunter-B, 990 feet north and 2,310 feet west of the SE cor. of Section 34, Block B-5, School Land.

Republic Production Co.'s No. 1 Ida Hendrick-C, 2,310 feet north and 990 feet west of the SE cor. of Section 42, Block B-5, School Land. Skelly Oil Co.'s No. 1 T. G. Hendrick, 330 feet south and 2,310 feet west of the NE cor. of Section 40, Block 26, School Land. Southern Crude Oil Purchasing Co.'s No. 2 Ida Hendrick, T-88-I, 990 feet south and 330 feet west of the NE cor. of Section 30, Block B-5, School Land. Same company's No. 3 Ida Hendrick, T-88-I, 1,650 feet south and 330 feet west of the NE cor. of Section 30, Block B-5, School Land.

Young County

Allday Oil Corp.'s No. 4 C. W. Johnson, 450 feet north and 750 feet east of of SW cor. of Lot No. 14, Ed W. Sergeant Survey, A-253. Same company's No. 5 C. W. Johnson, 150 feet south and east of the NW cor. of Lot No. 14, Ed W. Sergeant Survey, A-253. Allday Oil Corp. and Carter's No. 2 J. B. McKinley, 450 feet north and 150 feet west of the SE cor. of Section 1,489, T.E.&L. Survey. Same company's No. 3 J. B. McKinley, 150 feet north and 450 feet west of the SE cor. of Section 1,489, T.E.&L. Survey. W. R. Cooper and others' No. 1 J. L. Anderson, 150 feet north and west of the SE cor of the south 66 acres of the east 132.5 acres of Section 1,913, T.E.&L. Survey. Fisher & Gilliland's No. 1 E. R. and C. B. Carter, 150 feet north and west of the SE cor. of the W half of the SE of Section 1,594, T.E.&L. Survey.

R. Q. Jones and others' No. 1 W. W. Farmer, 150 feet north and east of the SW cor. of the north 40 acres of the south 80 acres of the west 100 acres of the E half of Section 2, Galveston Bridge & Navigation Co. Survey, A-118. C. Kleiner and others' No. 3 C. W. Langston, 150 feet south and 450 feet west of the NE cor. of the S half of Section 1,490, T.E.&L. Survey. Parker and others' No. 1 C. W. Johnson, 450 feet south and 150 feet west of the NE cor. of Lot No. 4, Ed W. Sergeant Survey, A-253. Pennell Oil Co.'s No. 1 C. M. Boyd, 150 feet south and east of the NW cor. of the south 40 acres of the SW of Section 1, B.B.B.&C. Survey, A-34. Reed & Wooten's No. 1 B. K. Crossland, 150 feet south and west of the NE cor. of the SW of the SE of Section 3, G.B.&N. Co. Survey, A-2,224. Same company's No. 1 C. N. Keen, 150 feet north and east of the SW cor. of the W. W. Porter Survey, A-1,876.

E. R. Riggs and others' No. 1 O. L. Street, 150 feet south and west of the NE cor. of the east 200 acres of Section 1,488, T.E.&L. Survey. W. R. Stafford's No. 2 J. L. Boone, 150 feet south and 830 feet east of the NW cor. of the SW of the NW of Section 1, B.B.B.&C. Survey, A-34. Tom Casey and others' No. 1 J. L. Boone, 150 feet south and east of the NW cor. of the SW of the NE of Section 1, B.B.B.&C. Survey, A-34. Williams & Willis' No. 1 J. M. Keen, 150 feet south and east of the NW cor. of the east 30 acres of the south 70 acres of the SW of Section 3, G.B.&N. Co. Survey, A-1,954. D. L. Wolf and others' No. 3 J. T. Lowe, 150 feet south and east of the NW cor. of the N half of the SW of Section 59, T.E.&L. Survey.

Corrected Locations

In Coleman County: Roth & Faurot's No. 1 Sealy & Smith, 330 feet south and 1,650 feet east of the NW cor. of the SW of Section 19, G.H.&H. Survey.

In Irion County: P. E. Hill's No. 1 H. Horney, 150 feet south and 450 feet west of the NE cor. of the SW of Section 2, Block 3, T.&T.C. Survey.

In Montague County: Carter & Rycade Oil Corp.'s No. 6 R. W. Cunningham and others, 450 feet south and 290 feet east of the NW cor. of their 40-acre lease and located in the L. B. Norton Survey, A-574. Same company's No. 7 R. W. Cunningham and others, 450 feet south and 340 feet east of the NW cor. of their lease and located in the L. B. Norton Survey, A-574.

SUGGESTS NEW BASIS FOR GASOLINE CONTRACTS

(Continued from Page 150)

counting, whether it be 20 and 25 or some other figures.

Going further than this, distributors maintaining wholesale stations operating the same on commission basis, should work out a percentage basis commission for their agents, plus a reasonable cartage allowance, if desirable for long distance hauls, but letting the percentage commission of say 10 per cent be the basis and that applying on the net price to the dealer after the 20 per cent, or some such discount, is made from the original retail schedule.

This then would carry the plan to a point where all parties concerned would be interested in avoiding local destructive price wars, which reflects back in the end to the producer of crude. It may be remarked here that every person or firm interested in the production of crude oil, or interested directly or indirectly in furnishing equipment or supplies to producers or refiners or distributors, is affected to a more or less extent by the price that "Lizzie" pays to have her tank filled at the service station, for after capital money has been spent, all new money, practically speaking, that goes back into the business is that money which "Lizzie" pays "Jimmie" at the service station. A stable and reasonable service station price is therefore a thing to be desired and encouraged by all parties interested directly or indirectly in the petroleum industry.

PROGRESS IN GAS DISTRIBUTION; BETTER SERVICE TO THE CONSUMER

By C. W. Robbins*
General Gas Superintendent, Oklahoma Northern Utilities Co.

In the field of gas measurement there has been further trend toward the use of the positive meters in large sizes, either singly or in bank, for the measurement of gas to moderate size industrials and commercials. The use of proportional meters has about disappeared. The use of large positives is due to several reasons. For moderate installations they take up less space than an orifice meter, are more easily computed, more easily read by the consumer and are more easily tested. Also there is no correction needed for changes in specific gravity and the range of measurement is greater. This later point is quite important since the flow when an industrial is shut down may be quite small which a positive will measure but an orifice meter can not. Two examples of this sort come to mind; one at Enid, where four meters having a total combined capacity of 20,000 per hour are banked for measuring gas to an ice plant and at Kansas City, where 24 meters are banked having a total capacity of 240,000 feet. A manufacturer of rotary meters has recently brought out a combination of a rotary meter and a positive meter with a differential pressure valve adjusted to pass the gas through the positive meter till its capacity is reached, at which point the gas is passed through the rotary meter. This has the advantage of measuring very small flows and at the same time very large flows with small error. The rotary meter has a normal capacity of 60,000 per hour and the positive meter 5,000 per hour. Meters of the rotary type are particularly good for measuring dirty gas as they are affected very little by dirt.

The testing of large positives has always been a source of expense since they must be tested on the job with a funnel meter or disconnected and taken to the shop and placed on the prover. One company in the state has been making use of a portable master meter and has found it very satisfactory. The meter is made of aluminum and is carried on a light trailer with the necessary hose. This meter is checked at frequent intervals in the shop and very little adjustment has been found necessary. Since the meters are placed in series there is no need for any calculations as neither specific gravity nor temperature are required. Also there is no need to carefully regulate the flow in order to maintain the differential on the funnel just right.

Orifice Metering

No great amount of change has taken place in measuring gas by orifice meter. One company has brought out a meter having a new type of lever action between the float and pen arm making the angular relation constant. The findings of the committee which met in the East to determine orifice meter coefficients has not yet published its findings. The preliminary report, however, carried much valuable information. Experiments conducted on straightening vanes proved their value beyond any doubt. Experiments were conducted to find out what effect fittings of various kinds had on the measurement when placed before or behind the meter, and settled many controversies. The use of two gauges having different ranges of differential and on the same orifice to form a wide range meter have proved satisfactory and are being used to a greater extent. They are particularly valuable for town border measurements.

In the last two years there has been a gradual tendency toward adoption of the specific gravity balance. The reasons behind this are several. It is more accurate and more consistent, less liable to error caused by water or oil, can be operated at temperatures below freezing and when necessary the determinations can be refined and made very accurate. The first forms of the balance were rather cumbersome and awkward to operate but recent designs are greatly improved and besides being quite portable and convenient to run are real instruments of precision. The result is that specific gravity is now generally given to three figures and sometimes four and only a few years ago two was the custom since the bottle would not check itself closer unless under favorable conditions and with very careful handling.

Short Meter Course

One factor in the progress of gas measurement is the annual meeting of the Southwestern Gas Meter Short Courses at Norman, Okla. Last year over 275 men from five different states attended for three days of earnest work and accomplished much. Since the establishment of the meter school there has been a vast improvement throughout the State in the manner of measuring gas and in the maintenance and testing of meters. This year the school meets on April 24, 25 and 26 and we expect an attendance of about 300.

The distribution of gas has seen several refinements. Operators are requiring more and better service from their regulators, are paying more attention to pressure regulation and the result is that there are better regulators made now than ever before. They are made so that most of the usual repairs can be done without removing from the line. More attention is being given to regulation characteristics. The outlet pressure of a regulator has an inherent tendency to fall as the load increases. To counteract this effect and also to actually cause a rise in the outlet pressure at peak loads several have been equipped with lever and roller arrangements. The lever and roller type must be equipped with limiting links otherwise they may lock open. A disadvantage of this type is that should the inlet pressure fall the outlet pressure will rise, even though there is no increase in flow, since the valve opens wider. A low pressure regulator has been developed which is controlled by small auxiliary regulators and has a lever and spring arrangement making it possible to raise the outlet pressure as the load increases. The apparatus is not very complex and should prove very useful.

Service regulators have shown a decided improvement. Most of them are now designed to make possible the usual repairs to the valve cap and seat without removing from the line. Most types are available in spring and dead weight types. The mercury seal is giving way to the dead-weight pop-off which is cheaper to repair and does not require such careful handling. These improvements have been the result of greater demand for them on medium pressure distribution systems.

Pressure Control

One manufacturer is now bringing out a pressure control system that will raise and lower the pressure during the day, on a prearranged schedule, by the use of a clock driven cam; the same clock also rotates the chart on which the pressure is recorded. In actual use this regulation has proved so accurate that one chart which was left on three days had the same appearance as a chart left on only one day. They are also developing a system to vary the pressure according to the flow so that there need be no change in cams to make it entirely self-operating. Such methods of pressure regulation will help greatly in the reduction of leakage and operating expense.

The use of paranite seats on medium pressure regulators where the inlet pressure is not too high has proved a big improvement and very successful. Hard seat regulators never have been known to shut off absolutely tight for any length of time. The effect of using these seats is that fewer regulators blow up when the outlet lines are shut tight, as may often happen on industrials, and less gas is lost through protecting pop-offs.

Flanges may now be purchased with electric welded nipples for use in connecting flange fittings to welded lines. Recently a joint makes use of a malleable housing and a "C" ring rubber of oil

*Before Oklahoma Utilities Association, Tulsa, Okla.

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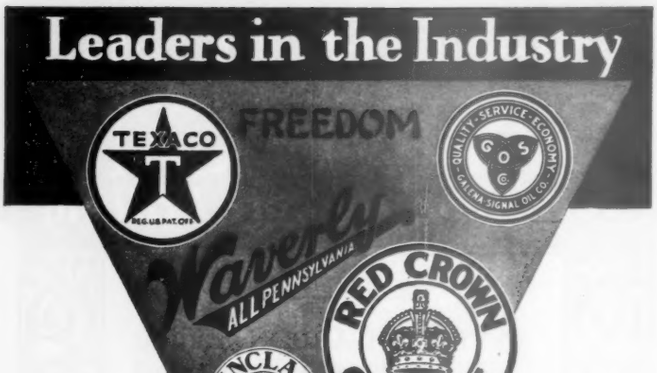

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resisting composition. This coupling requires shallow grooves on the ends of the pipe and while this has certain disadvantages it gives great end strength to the joint, is tight and takes up expansion and contraction. Also it has about 50 degrees of deflection without any harm to the housing and can be laid with great speed since it only has two bolts and speed wrenches can be used. A test was conducted on a short length containing five couplings and no measurable leaks were found over a seven-day period at 8 ounces pressure or 40 pounds with the section supported by its ends and the couplings all thrown under stress. The section was about 20 feet long.

Dust and Corrosion

The increased use of residue gas from gasoline plants brings with it two additional problems, dust and internal corrosion caused by the air content. The dust comes in with the air through leaks in lines under vacuum and the rust is due to the air. Air by itself in small quantities does not cause any difficulties but the rust and dust do. They ruin compressors, regulators and meters besides filling the lines with a fine dust that packs hard and reduces the capacity. Removing the air is a difficult matter as a chemical or burning process must be used. With large lines the loss is sufficient to justify rather large expenditures to prevent this internal rusting. The removal of dust is not so difficult and may be done in several manners. There are types of gas washers that use oil and are proving very efficient. Most of them are made so that the oil may be renewed and the dirt removed without shutting down. Generally speaking the oil type is more efficient in removing all the dust. Some of these filters are quite good but they all must be periodically cleaned, which means by-passing or cutting in another unit in a separate setting. The problems introduced by dust, rust and air has given some operators so much trouble and expense that one expressed himself in favor of burning it in a carbon black plant or in a power station made for the purpose and put only pure well gas in the lines.

Medium Pressures

The last year or so has seen many operators adopting the use of medium pressures for gas distribution. This method of distribution has been in use for some years on the coast and in various places in the East and judging from its growth is giving satisfaction. Various combinations of pipe sizes and line pressures are used but the advantages gained are many. The first and most important is that the cost of serving scattered consumers is much less and the service rendered is better. Many consumers and districts can be served at a profit which could not be considered if low pressures were to be used. The matter of increased leakage is being overcome by better means of construction and operation and better equipment. The system is being adopted by some for extensions to existing low pressure systems because of the economies possible and the increased markets that can be reached at a profit. When properly installed and operated very little trouble has been experienced with this system. Figures given by a British engineer may be quoted as an indication of what may be expected from complaints when compared with low pressure. House fittings caused the greatest number of complaints and were about the same in both systems, 8.3 per cent. There was very little difference in the number of complaints caused by meters and appliances 1.9 per cent and 4.0 per cent, respectively. There was an increase due to services, .83 per cent for the high and 32 per cent for the low. Complaints due to service regulators ranked next to house fittings and was 5.25 per cent. This latter should be reduced somewhat with the better regulators now available and if a small filter be placed ahead of the regulator where the gas is known to contain dust.

In connection with medium pressure gas distribution goes the matter of high pressure storage. This method is finding favor in various parts of the country but particularly on the coast, where medium pressure distribution seems to have been developed to its highest point. Use of these tanks makes it possible to use smaller lines yet or to use existing lines longer before larger ones have to be laid to care for increasing load. The effect is to raise the load factor of the lines and to smooth out the peak demands. These are used both in cities for supplying districts and in field lines where towns some distance from trunk lines are supplied. One company on the coast now has over 5,000,000 feet of storage on its lines and is contemplating additional units. The tanks used are either spherical or cylindrical with hemispherical ends. The latter are placed either horizontally or vertically. The latter method seems to be preferred by some since the expansion problem is more easily taken care of. The diameters run from 6 feet for the small ones to over 50 feet for the large sizes. About 200 feet seems to be the maximum length. This combination of storage tanks and medium pressure lines for distributing gas cannot be equaled by low pressure methods when it comes to flexibility and economy of construction.

Recently a company in the State wanted to install a high pressure gauge in its office but didn't want to spend the necessary cash to purchase one of the regular remote control recording gauges. The alleys and streets were all paved and the numerous walks and drives in the parking made a buried line out of the question. The distance was 2½ blocks. Finally a one-quarter-inch line was welded together and strung on the city light poles. It was treated as a live wire, being suspended from insulators and short lengths of rubber hose being put in at each end. Stops and tees for testing the line for leaks were installed where the line connected with the high pressure system. Since there is no flow in the line static conditions exist and by actual test it was found that there was no difference in pressure between the two ends. The total cost was less than $70, not including the gauge. No messenger wire was used to support the pipe in-crossing streets, since the pipe is of the same material as the wire and the factor of safety was about 20.

Accounting Progress

Accounting procedure has seen several important improvements, principally in the manner of billing consumers. The most radical system which has proven satisfactory is the ledgerless or "stub" system. By using a modification of the usual bank posting machine a bill is made out having three and sometimes four sections, or stubs. A carbon copy of all the bills made out is made at the same time and constitutes what is called the audit or check sheet. From the totals at the bottom of this sheet it is possible to check the bills for accuracy. The sum of the totals on all the audit sheets gives the figures necessary for entry in the general books. Of the three stubs one is retained in the office and constitutes the ledger, since it includes all arrears. The remaining two are mailed or delivered to the consumer. At the time of payment both are stamped and one placed in the cash drawer, the other being retained by the consumer. Posting consists of merely matching the stub in the drawer with its mate in the stub file and placing both of them in a "paid" file. As posting proceeds the "ledger" becomes smaller and smaller till at the end of the discount period only the number of accounts remain that need individual attention before shutting off. This system is adapted especially to large plants. The one at Chicago takes care of over 900,000 accounts and proves very satisfactory. A system for customer account has been developed by practically every maker of adding and posting machines, some making use of a modified Boston ledger and others a modified loose leaf ledger.

Progress cannot be reported either as to pipe line coverings or pipe line flow formulae since neither the Bureau of Mines nor the A.G.A. committee is ready to report.

The progress which has just been noted is by no means all the progress that has been made recently for naturally there must be much that has not come to our notice or which has not been announced or published. One of the most promising and encouraging things about

the gas industry as a whole is its natural tendency to view its troubles frankly and then go about fixing them and at the same time finding better ways to accomplish its work and to render better and more continuous service to its consumers.

SOUTHWEST NATURAL GAS DIVISION COMPLIMENTED BY A.G.A. DIRECTOR

By Alexander Forward*
Managing Director, American Gas Association.

Sometimes we hear that the world is overorganized and that there are too many associations, yet any appraisal of the industrial or business situation will convince the student that the country is a very great deal better off from an economic as well as every standpoint because it is so well organized. If the American Gas Association, for instance, did not pay for itself many times over, the men who are at the helm would see that it did not last long. It is larger than ever; its income is greater than ever, its membership, its committee work, its research work are on a bigger scale than at any other time. The men who serve on our executive board and who decide what shall be done with its funds and who give to the industry the best of their thought and their talent, can be depended upon to give the work of the association its proper balance and to keep it there.

To a considerable degree the fact that the association is larger than ever is due to the consolidation effected last year with the Natural Gas Association of America which, after a long history of usefulness in the industry, joined forces with those engaged in making and distributing manufactured gas. This consolidation has brought to our ranks not only strength in numbers of gas company and individual members but has brought to it an accession of leadership. The natural gas men of America have been pioneers, men who were not afraid to take a chance and to risk their all, and it has developed outstanding characters of original thought and boldness of purpose and of action. They will make and are already making their mark in the forces of a united industry and introducing a spirit of progressiveness which helps to stimulate the association in all of its efforts.

The natural gas industry is adequately represented upon the executive board and these representatives take full part in its deliberations and its decisions. We now have natural gas men serving on all of our general committees, whether dealing with rates, education, safety, and practically upon all the committees of all the sections of the association. We have thus drawn into the work of a united industry the active men in natural gas accounting field, in technical lines, in industrial gas utilization and development, in research, in publicity and in commercial plans and endeavors. It is a pleasure also to record that a number of manufacturers, formerly members of the Natural Gas Supplymen, Inc., have identified themselves with the very active manufacturers' section of the American Gas Association and are thus doing their part in the advancement of the industry.

This consolidation has quickened the entire fabric of association work and within a time which grows shorter every day it will be practically impossible to distinguish between a natural gas man and a manufactured gas man, either by his looks or by his activities for the benefit of the gas industry as a whole.

The Southwest Division of the Natural Gas Department for reasons which may be amply gleaned from what I have already said, is destined to be a big portion of the department. It was my privilege to attend the Houston convention last fall and to note there the complete cooperation and the thorough and frank interchange of views manifested among your people. The southwest division has a great future and the men who are building it today and who I hope will guide its course for many years will live to see its pre-eminence.

One of these men has already gone and we all know how much thought and effort and conscientious purpose George McQuaid put into the work of the southwest division.

It is not my intention to discuss one association in this joint meeting but I recall with what I think is pardonable pride that the American Gas Association laboratory in Cleveland, where gas appliances are tested and certified for compliance with national standards of safety and reasonable standards of performance, has been recorded by the best nonfiction selling book of the present season as the outstanding example of an American industry regulating itself. The Blue Star seal of laboratory approval on domestic gas burning appliances stands, among other things, for self-regulation of our industry.

*Before Oklahoma Utilities Association, Tulsa, Oklahoma.

FOREIGN CRACKING FACILITIES EXPAND

(Continued from Page 148)

The Anglo Persian Oil Co., Cory Brothers, Medway Oil & Storage Co. and the Standard Oil Co. of New Jersey have installed American cracking processes at their plants in Great Britain. The expansion of cracking at refineries in Canada has also been rapid and of direct significance to the refinery operators in this country, which in the past have been accustomed to furnish a substantial part of Canada's domestic requirements.

A recent report of refineries in Rumania listed 33 companies as operating plants. In addition there were a few companies operating very small plants which were not listed. Four of the 33 companies have installed one or more of the Dubbs cracking units. These four include Aquila Franco Romana and Steaua Romana, operating two of the largest refineries in Rumania.

In the Asiatic countries several refineries have installed cracking units some of which are of their own design. The most ambitious program from the standpoint of the American installations is that of DeBataafsche Pet. Maat. at Balik Papan on the east coast of Borneo. This refinery is the largest of the East Indies having a rated capacity of 25,000 to 30,000 bbls. daily.

Two units of the Dubbs process were originally installed at the refinery. A construction program is now under way calling for the installation of eight additional units making a total capacity of almost 10,000 bbls. daily. The Curacaische Pet. Ind. Maat at Curacao, Dutch West Indies, also has a large construction program under way. Four 1,000-bbl. units are under construction in addition to the two units already operating.

The Burmah Oil Co., at Rangoon, India, has two 1,000-bbl. Cross units in operation and a 1,500-bbl. Dubbs unit under construction. At its Yohohama, Japan, refinery, which is one of its several plants, the Nippon Oil Co. is now operating two of the Dubbs units. At its Niigata plant, a unit of the Cross process has been installed.

DRILLING PERMITS REFUSED

WASHINGTON, D. C., Mar. 17.—The Secretary of War has refused permission to drill for oil in that part of the Fort Robinson Military Reservation in Nebraska which was licensed to the city of Crawford, in 1925, and is being used for a park and municipal golf course. The secretary rules that the license to the city does not permit drilling for oil and that authority for leasing War Department lands under his control does not extend to mineral and phosphate lands which were specifically exempted from the lease authority.

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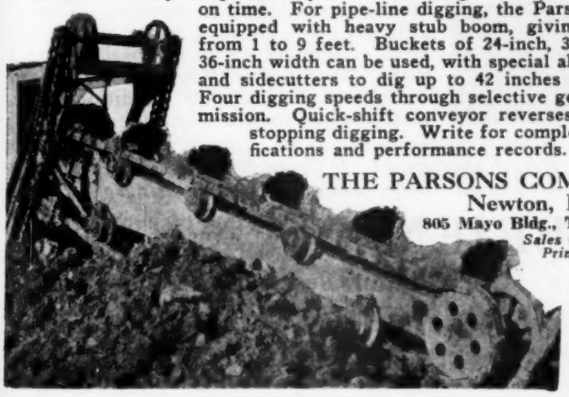

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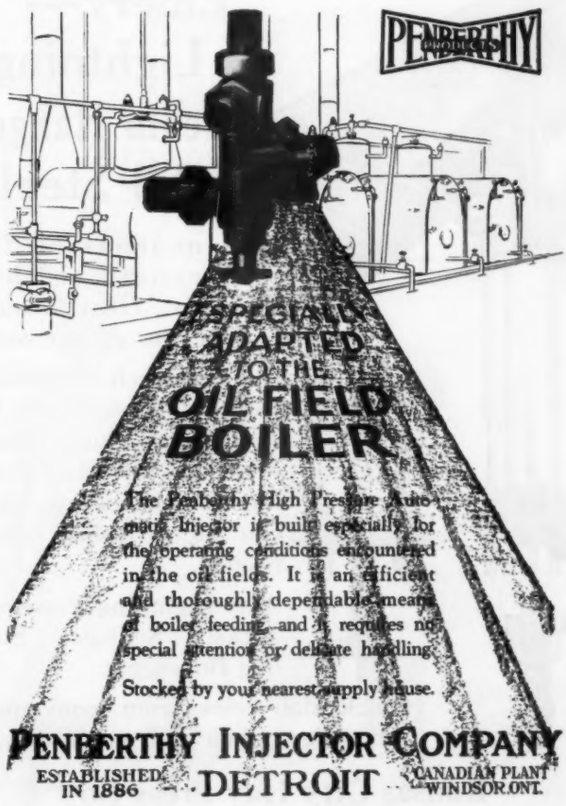

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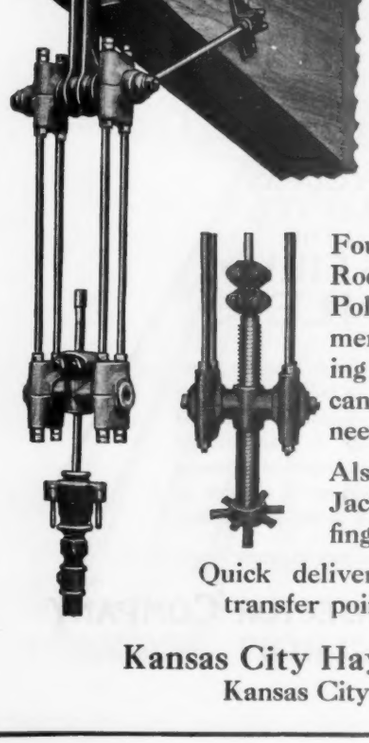

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PETROLEUM EXPORTS DURING 1927; MARKED SHRINKAGE IN VALUE

Statistics from Bureau of Foreign and Domestic Commerce.

There was a marked shrinkage in the value of our exports of petroleum products in 1927 as compared with 1926. Total values of all products, including crude, decreased from $554,533,629 in 1926 to $486,143,157 in 1927. Quantitatively crude oil exports remained fairly constant at 15,406,045 bbls. in 1926 with 15,843,405 bbls. in 1927, while the total refined oils for 1926 was 108,397,776 bbls. in comparison with 115,501,010 bbls. in 1927. Values in total refined oils shrunk from $497,211,908 in 1926 to $429,900,884 in 1927. Some 79 per cent of the decreased valuation in refined oils, or $52,830,313, was contributed by one product alone, gasoline.

It is interesting to note that there is every possibility that oil exports occupying first place for many years as a major group in United States exports of manufactured or processed merchandise will be displaced by the group "Automobiles and Other Vehicles" in the year 1928. In 1927 this latter group was credited with a valuation of $420,651,837 as against $356,065,820 for 1926, and a 1927 valuation for all oil products of $486,143,157. The automotive industry expects an exports trade in 1928 of approximately $500,000,000 while marked appreciations in oil values not now visible would be necessary for any valuation in excess of this amount for the oil industry.

Tables: Petroleum Exports in 1927-1926.

Exports Crude Oil
(Barrels 42 gallons)

	1926	1927
Canada	12,982,813	13,036,216
Cuba	434,203	526,819
Japan	1,334,854	1,633,389
Other countries	654,175	646,981
Total	15,406,045	15,843,405

Exports Gasoline, Naphtha and Other Light Products
(Barrels 42 gallons)

Belgium	1,026,509	1,126,085
Denmark	734,113	1,099,945
France	7,397,845	6,832,703
Germany	1,590,146	1,230,917
Italy	1,032,688	982,721
Netherlands	1,708,426	1,674,054
Norway	266,194	282,797
Portugal	131,279	261,812
Spain	813,426	984,202
Sweden	698,061	1,232,641
United Kingdom	14,694,328	12,690,870
Canada	2,628,722	3,144,539
Panama	167,968	96,548
Mexico	224,782	364,465
Cuba	821,686	488,867
Dominican Republic	58,736	72,189
Argentina	680,705	1,349,996
Brazil	1,054,945	942,660
Uruguay	391,901	353,355
Other South America	108,894	153,059
China, Hong Kong and Kwantung	210,927	376,665
French Indo China	61,080	20,659
Japan	492,944	356,044
Philippine Islands	334,353	292,704
Australia	1,914,401	2,470,403
New Zealand	975,221	1,061,016
British South Africa	521,175	657,976
British West Africa	181,717	284,940
French Africa	406,384	613,758
Morocco	65,167	71,940
Portuguese Africa	114,151	84,500
Spanish Africa	63,568	52,758
Other Countries	877,434	728,469
Total	42,479,876	43,436,328
In bulk	36,703,142	38,801,090
In containers	5,776,734	4,635,238

Exports Kerosene
(Barrels 42 gallons)

Country—	1926	1927
Belgium	556,064	638,588
Denmark	622,597	517,990
France	2,066,209	1,129,435
Germany	640,609	815,850
Italy	517,221	258,492
Netherlands	1,762,445	1,757,326
Norway	282,227	269,953
Portugal	242,323	315,948
Spain	167,821	77,623
Sweden	237,511	284,978
United Kingdom	3,043,278	3,170,465
Canada	215,018	128,003
Central America	110,983	54,997
West Indies and Bermudas	152,316	158,990
Argentina	326,301	336,200
Brazil	623,079	648,462
Uruguay	219,016	225,410
British India	1,748,171	1,360,741
British Malaya	54,548	153,404
Ceylon	16,992	2,860
China, Hong Kong and Kwantung	3,070,592	2,562,821
Netherlands East Indies	209,319	173,621
French Indo-China	172,187	54,683
Japan	2,441,347	1,533,471
Philippine Islands	280,515	197,460
Australia	571,485	599,564
New Zealand	108,605	114,792
British Africa	536,702	608,364
French Africa	227,759	320,211
Portuguese Africa	61,576	70,922
Other Countries	731,678	837,895
Total	22,016,215	19,279,503
In bulk	16,689,024	13,759,769
In containers	5,327,191	5,519,734

Exports Gas and Fuel Oil*
(Barrels 42 gallons)

Countries—	1926	1927
Belgium	527,026	534,410
Denmark	383,191	796,205
France	675,742	92,563
Germany	844,577	1,257,994
Italy	270,941	192,388
Netherlands	533,973	789,459
Norway	206,235	196,004
Spain	243,017	66,511
Sweden	163,747	236,980
United Kingdom	5,709,130	5,507,282
Canada	4,214,008	2,377,177
Panama	5,105,994	7,360,016
Mexico	924,232	1,042,742
Cuba	251,738	1,942,460
Other West Indies and Bermudas	323,622	* 543,926
Argentina	2,140,329	4,307,750
Brazil	614,256	1,166,336
Chile	4,348,362	4,349,966
Other South America	959,600	1,664,185
China, Hong Kong and Kwantung	954,277	1,159,120
Japan	2,148,607	4,419,106
Philippine Islands	722,875	685,995
New Zealand	994,953	918,587
French Africa	362,275	48,707
Other Countries	881,343	1,480,531
Total	34,516,390	43,018,503

*Does not include fuel or bunker oil laden on vessels engaged in the foreign trade, which aggregated during the month and 12 months ending December, as follows: December, 1926, 4,065,470 bbls.; 1927, 4,263,618 bbls.; 12 months ending December, 1926, 46,661,686 bbls.; 1927, 50,050,574 bbls.

Exports Red and Pale Lubricating Oil
(Barrels 42 gallons)

Country—	1926	1927
Belgium	444,340	646,368
Denmark	113,560	112,715
France	1,000,513	792,641
Germany	470,309	777,802
Italy	164,349	155,777
Netherlands	122,503	96,266
Norway	28,807	.....
Spain	84,992	143,738
Sweden	46,267	58,908
United Kingdom	1,513,680	1,199,511
Canada	188,790	250,991
Mexico	32,611	46,071
Cuba	47,097	59,264
Argentina	91,487	193,615
Brazil	117,970	137,044
Chile	32,640	36,198
Other South America	61,014	63,735
British India	202,215	300,061
China, Hong Kong and Kwantung	109,838	145,270
Netherland East Indies	32,828	46,967
Japan	139,911	156,432
Philippine Islands	45,873	44,013
Australia	177,417	171,288
New Zealand	40,120	37,224
British Africa	23,413	29,432
Egypt	17,009	13,357
Portuguese Africa	10,621	10,674
Other Countries	131,191	229,852
Total	5,475,375	5,984,098
Exports black lubricating oil	609,093	671,913

Exports Cylinder Oil
(Barrels 42 gallons)

Countries—	1926	1927
Belgium	203,385	100,440
Denmark	32,018	21,890
France	496 231	335,936
Germany	343,864	348,767
Italy	222,338	196,454
Netherlands	47,913	76,011
Norway	10,392	9,918
Spain	51,124	51,662
Sweden	33,591	22,485
United Kingdom	617,016	753,754
Canada	101,590	107,271
Mexico	43,886	22,240
Cuba	29,978	30,388
Argentina	98,471	110,194
Brazil	56,102	55,794
Chile	17,308	17,679
Other South America	35,818	39,401
British India	93,476	67,429
China, Hong Kong and Kwantung	34,406	23,077
Netherland East Indies	17,130	8,621
Japan	55,244	56,361
Philippine Islands	9,566	2,788
Australia	154,789	180,578
New Zealand	28,681	33,995
British Africa	89,710	85,215
Egypt	51,082	46,664
Portuguese Africa	32,414	29,256
Other Countries	164,388	132,314
Total	3,171,891	2,966,384

Exports Paraffin Wax
(Pounds)

Countries—	1926	1927
Belgium	7,932,835	10,695,036
Germany	17,160,269	14,710,805
Irish Free State	4,582,485	6,608,898
Italy	48,547,997	41,324,161
Netherlands	8,744,486	12,890,208
Spain	16,617,530	17,891,462
Sweden	6,987,465	7,644,501
United Kingdom	84,526,253	107,330,021
Other Europe	7,477,077	5,613,329
Central America	6,566,776	7,140,607
Mexico	12,583,471	18,439,413
Cuba	3,018,422	3,274,841
Argentina	9,616,940	14,273,764
Chile	8,592,912	7,813,936
Colombia	8,725,683	7,654,712
Peru	4,986,819	4,808,501
Other South America	9,185,009	10,553,275
China, Hong Kong and Kwantung	39,894,848	19,023,561
Japan	16,192,982	6,701,550
Philippine Islands	1,926,430	1,681,380

British South America	4,240,235	3,168,756
Other Countries	8,377,913	11,054,918
Total	335,583,747	340,297,094
Unrefined	70,948,114	76,123,009
Refined	264,635,633	264,174,085

MISCELLANEOUS EXPORTS

	1926	1927
Exports of mineral spirits (substitute for turpentine), gallons	1,762,852	2,648,274
Exports of insulating or transformer oils, gallons	3,256,737	2,844,976
Exports of light lubricating oils in small packages, gallons	395,723	545,379
Exports of lubricating greases, pounds	96,082,903	100,483,272
Exports petroleum asphalt, tons	130,883	344,166
Exports petroleum coke, tons	85,814	93,253
Residuum, barrels 42 gallons	159,639	217,446

YEAR'S RESULT IN CANADA SHOWS GAIN

(Continued from Page 122)

wright Oils, Ltd., in one well. The latter well is reported to be pumping around 30 bbls a day. The Maple Leaf Oil & Gas Co. secured a gas production in one well, which is being used to supply the town of Wainwright.

Development appears to be hampered by difficulty in marketing the asphaltic crude, which tests between 12 and 22 Baume. Financial conditions, and the more spectacular results secured in the Turner Valley, also seem to have restricted operations in the Wainwright Field. In 1927 some seven tests were more or less active, as follows:

Company—	Location—LSD	Section	Depth	Status:
British-Wainwright Oils	4	31-45-6w4	2,222	cemented
Fabyan Petroleum	8	24-45-8w4	1,100	shut down
Interior Oil Co.	...	36-44-7w4	2,100	drilling
Mid-Canada Oils	...	35-45-6w4	....	drilling
National Exploration Co.	1	30-45-6w4	2,370	gasser
Western Consolidated No. 2	...	30-45-6w4	2,332	abandoned
Wainwright-Dome	7	31-45-6w4	....	shut down

Drilling so far in this field indicates natural gas and heavy crude oil over a considerable area; while the deep drilling possibilities of the field have not yet been adequately tested.

Alberta Wildcat Tests

Outside these three fields, isolated tests have been carried on at widely scattered points in Alberta. Most of these tests are either in the foothills belt or in the southern part of the province, where interest has been stimulated by the Skiff discovery and by various theories as to the possible northward extension of the Montana fields. The following wildcat tests have been fairly active in the locations indicated:

FOOTHILLS BELT

Company—	Location—LSD	Section	Depth	Status:
Bow River—Imperial-Bow River No. 1	15	12-25-5w5	5,585	abandoned
DeWinton—Anglesey-Lakeview No. 1	1	22-21-1w5	1,877	drilling
Aldersyde—Ranchmen's Oil & Gas	16	13-20-29w4	2,300	drilling
Highwood—Imperial-Highwood	3	36-18-3w5	3,624	drilling
Moose Mountain—Cherokee Oil Co.	..	33-23-5w5	2,450	abandoned
Signal Hill Oil No. 1	9	34-23-5w5	2,025	abandoned
Signal Hill No. 2	9	34-23-5w5	1,677	drilling
Morley Reserve—Gold Coin Oils	...	.....	3,928	shut down
Wabash Oils	...	.....	350	drilling
Nanton—Imperial-Rice Creek	12	4-14-2w5	5,747	abandoned
Olds—Coates Syndicate	13	28-32-1w5	286	shut down
Pincher Creek—Mountain Royal No. 1	4	7- 6-1w5	1,000	shut down

PLAINS AREAS

Acadia Valley—Fuego Oils	...	34-25-4w4	2,860	shut down
Altario—Rosebud Syndicate	5	15-33-2w4	450	shut down
Burdett—Imperial-Burdett	...	8-11-11w4	3,950	abandoned
Erickson Coulee—Imperial Oil	13	8- 1-12w4	....	gasser
Coutts—Urban Oils	...	4- 1-15w4	3,520	abandoned
Cypress Hills—Eagle Butte	3	31 7-4w4	1,000	shut down
Gleichen—Oil Producers	4	24-22-23w4	....	rigging up
Lesser Slave—International Oils	...	14-74-4w5	2,840	abandoned
Medicine Hat—Roth No. 2	...	8-13-6w4	3,150	abandoned
Ribstone—Advance No. 3	1	16-46-1w4	504	shut down
Imperial-Ribstone	...	5-45-1w4	3,489	abandoned
Ribstone Oils	1	1-46-1w4	1,925	cementing
London-Ribstone	14	10-43-3w4	1,000	drilling

Many of these areas, alike in the foothills and in the plains, present good possibilities which cannot be adequately tested by the work now in progress. Of the tests enumerated as shut down a number will resume as soon as weather conditions permit.

The Ribstone-Blackfoot structure, mapped by Dr. G. S. Hume and which was regarded as an excellent prospect, has still to be adequately tested. Of 10 tests located on this structure, only four reached the active drilling stage, and only one, that of Imperial Oil, Ltd., has definitely been completed. The Imperial-Ribstone got a show of oil but no commercial production around 1,900 feet; and deeper drilling failed to secured production.

Other Western Provinces

The year was marked by unusual activity in the province of Saskatchewan, with seven tests actively drilling. Near Vera, Unity Valley Oil Co. did a little additional work on its No. 1 well, southeast quarter of Section 23-41-24w4. This got a big gas production in the upper sands and is being deepened. In the Riverhurst district, the Riverhurst Oil & Gas Co. got some gas production in two shallow wells, around 518 to 528 feet. Simpson Oil Co., drilling in Section 9-29-25w2, near Simpson, reported oil showings at 1,400 feet. Three new tests were barely under way when the year closed: Big Six Oil Co. in LSD 16, Section 18-29-2w3 near Kenaston; Ribstone-Wainwright Syndicate near Readlyn, and Rosetown Syndicate's Herschell No. 1 in LSD 13, Section 4-31-17w3, near Rosetown.

Failure of a bona fide test by the Irro Oil & Gas Co. to secure production in the Grandview district of Manitoba was the chief feature of drilling activity in that province.

In British Columbia there was a little drilling in the Sage Creek district, where two companies were reported to have encountered a small production of high-grade crude at depth. A third test is being put down by the Ferdig interests of Montana, in the same area. In the Fraser Valley little or no activity was reported.

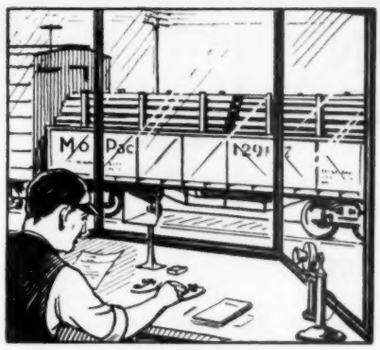
Except Saskatchewan, these provinces are not expected to witness any great drilling activity in 1928. The drilling for the coming year will be very active in Alberta, particularly in the Turner Valley and Skiff fields.

Prospective Drilling Operations

In the Turner Valley Field, most of the tests now under way will be carried to completion. Imperial Oil, Ltd., through its various subsidiaries is scheduled to show increasing activity in this field. Several tentative locations have been made for Royalite Oil Co., the Dalhousie Oil Co. is expected to drill several additional wells, and the Foothills Oil & Gas Co. will probably drill at least two additional wells. Imperial Oil, Ltd., is also under agreement to do a certain amount of drilling on the Home Oil Co. acreage. It is generally understood that Imperial Oil, Ltd., and its subsidiaries will have 15 outfits at work in the Turner Valley in 1928.

What will be done by the independent companies in this field depends largely on the results of tests now drilling.

In the Skiff Field, it is understood that Imperial Oil, Ltd., under its agreement



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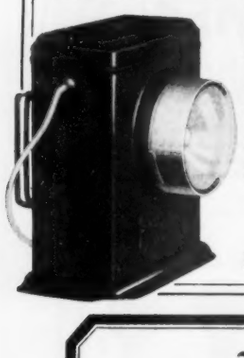

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with Devenish Petroleum, Ltd., will drill at least 10 tests, and it is expected that two outfits will be continuously at work till this is done. Gas Production & Transportation, Ltd., a subsidiary of the Canadian Western Natural Gas Co., will finish a test near Warner; and the Hudson's Bay-Marland Oil Co. and a Denver company are stated to be in negotiation with the Canadian Western company in regard to testing some of its acreage. The Canadian Western company itself will drill four tests for gas in the Barnwell and Foremost Fields; and in the Viking Field of east-central Alberta the Northwestern Utilities, Ltd., will drill two wells to maintain its gas supply.

Further drilling in the southern section of the plains area probably depends on results secured by Devenish Petroleums, Ltd., in the Skiff Field, and by the Eagle Butte Oil Co. in its Cypress Hills test.

In the southern foothills, Alberta Gas & Fuel Co., a subsidiary of the Henry L. Doherty Co., will drill two tests at Hillspring, near Waterton Lakes Park; one of these is already rigged up. Mount Royal Oil & Gas Co., which is drilling in the Pincher Creek district, has a second test located.

Hudson's Bay-Marland Oil Co.

In 1927 the Hudson's Bay-Marland Oil Co. carried on a very active and comprehensive investigation into oil possibilities in the Canadian West. Upwards of 12 geological parties were sent out. The work of these geological parties was completed in October, and at last reports the results secured were being analyzed at the company's headquarters at Edmonton. These results will be the basis of further and more detailed geological investigations in 1928. Though reports have been circulated in regard to early drilling by this company, the best information is that no actual drilling is likely to be commenced for another year at least. This company's prospecting is reported to extend from the Cassiar district of British Columbia to western Manitoba, though the greatest attention is being given to Alberta.

CENTRAL WEST FIELDS

(Continued from Page 60)

State, in Vigo and Sullivan Counties. Work is held up on account of the recent heavy snows and high waters in the Princeton area in the southwestern part of the State, while in the old Trenton Rock area in the northeastern part very little is being done.

In Prairie Creek Township, Vigo County, the Siosi Oil Corp. has drilled in two wells on the William Riggs farm, Section 31. No. 5 well is 330 feet from the south and east lines of the farm, in the southwest quarter of the northeast quarter of the section, and pumped 20 bbls. the first 24 hours from a depth of 2,198 feet. No. 7 well, 990 feet from the north and east lines of the same farm, in the northeast quarter of the southeast quarter, pumped 40 bbls., also from a depth of 2,198 feet. These two wells are in what is known as the "Little Oklahoma Field," in the southern part of Vigo County and just north of the Sullivan Field, in Sullivan County. This is a very good gravity crude.

In Fairbanks Township, Sullivan County, and just south of the "Little Oklahoma Field," the Ohio Oil Co.'s test, 330 feet from the north and west lines of the Rebecca Hopewell farm, in the NW NE of Section 5, produced 50 bbls. initially at a depth of 2,214 feet. The wildcat drilled by Billman and others, 250 feet from the south line and 660 feet from the west line of the Don Maple farm, in the SW SW of Section 9, Hamilton Township, same county, was dry in the regular pay sand at a depth of 724 feet, where salt water was found.

Illinois

An exceptionally good well was uncovered in a test drilled by the Dark Bend Oil Co. in the northwest corner of the Lloyd C. Mann farm, in the NE of Section 24, Southwest Township, Crawford County, not far from the Lawrence County line. The pay was found in the Kirkwood sand at a depth of 1,543 feet, and after a shot of 40 quarts showed a production the first 24 hours of 77 bbls., being the best completion for a long time in Illinois and opens up some territory that was supposed to be off the producing belt. The Kirkwood sand is something new for Crawford County, but has been a steady producer in Lawrence County for at least 20 years. In Prairie Township, same county, the One-Sixth Oil Co.'s test in the southwest corner of the Wilfred E. Evans farm, in the SW of Section 25, pumped 10 bbls. initially at a depth of 1,041 feet. A nice volume of gas was found at 930 feet in this test.

In Dennison Township, Lawrence County, Phipps, Blosser and others' test, 600 feet from the north line and 400 feet from the west line of the Olive Pond farm, in the SW of Section 2, pumped 5 bbls. Top of the Kirkwood sand in this well was found at 1,640 feet and drilled through 15 feet of the sand at 1,655 feet, then drilled to a total depth of 1,700 feet. The Ohio Oil Co.'s No. 4 in the southeast corner of the Sarah A Grayson farm, in the SE of Section 20, same township, where the top of the McCloskey was topped at 1,852 feet, then drilled 26 feet through the sand at 1,878 feet, then drilled 3 feet deeper to a total depth of 1,181 feet, the well doing but 1 bbl. after a 40-quart shot.

In Wabash Township, Wabash County, Wirebaugh and others' No. 7 on the C. Keyser farm, Section 6, developed a fairly good gas well in the upper pay sand at a depth of 1,025 feet, including 10 feet of sand. The well is 150 feet from the south line and 710 feet from the west line of the farm.

Central Ohio

Only one completion was reported from the Central Ohio Field, being the Ruff-Stewart Oil Co.'s second test on the Graffis heirs farm, Section 11, Rush Creek Township, Fairfield County, which was a dry hole at a depth of 2,620 feet.

Like the other divisions of the Central West Field, the Central Ohio Field is showing little activity on account of weather conditions. With the advent of spring much new work will be started for both oil and gas.

Large blocks of acreage have been leased up in the northeastern part of Ohio, in Gallia, Lawrence, Summitt, Carroll, Portage and Starke Counties, and many tests are planned for these counties later in the season.

Michigan

The production of the two Muskegon Field wells that are producers is gradually falling off, but they are still excellent pumpers. The discovery well of the Muskegon Oil Corp., on the Reeths farm, is doing around 52 bbls., while the same company's No. 1 on the Figge farm is reported holding at around 140 bbls. per day.

A nice gas volume was struck in the Johnson Oil & Refining Co.'s well on the Harley Smith farm at 598 feet, but is being drilled down to the Travers sand.

The Muskegon Corp. and its subsidiaries are preparing to drill wildcats in other parts of Muskegon County, as the companies filed leases on close to 2,000 acres in Norton, Fruitport and Ravenna Townships. Many of the leases in this block were previously under lease to the corporation, but now have been changed in the amount of royalty to be paid and some other considerations. Leases were also secured by the same parties in Sullivan Township.

N. D. Steel, of Oklahoma, filed a lease on 40 acres owned by Mawzyniec Ozga, in Section 9, Egelston Township, Muskegon County.

E. L. Dee, of Amarillo, Tex., assigned all his interest in a 20-acre lease owned by Andrew Luinstra, in Section 7, Muskegon Township, and a half interest in five acres owned by John D. Cooper in Section 8 to the Globe Oil Co. of Lima, Ohio.

M. R. Leafstrand assigned a lease on the Clifford Anderson three and a fraction acres to T. T. and T. F. McAllister of Grand Rapids, Mich.

Several of the wells now drilling in the Muskegon Field are using gas for fuel in their boilers.

MEXICAN DEPARTMENT REPORTS RESULT OF OPERATIONS IN 1927

MEXICO CITY, Mexico, Mar. 17 (By Trens Agency)—The concentration of data, subject to revision, gives for Mexican production in 1927 the figure of 10,193,940 cubic meters (64,119,884 bbls.), a figure which will vary little when the revision has been completed. Mexico now loses the second place which it has been occupying as a petroleum producing country since 1918, in which, having produced 63,828,326 bbls. it surpassed Russia, whose production then was 40,456,182 bbls.

The falling off in Mexican production has been due to the restriction of work by the companies which have opposed compliance with the petroleum legislation of Mexico.

The resumption of work which is expected has not yet started, even though already several companies have shipped large amounts of material and equipment and have them ready to start work. There is no doubt that the resumption will not be sudden but gradual; but at any rate, it is considered that the year 1927 was the limit of the decline which Mexican production had been undergoing since 1921.

In spite of the circumstances, in 1927 new and important pools were discovered. The Salinas Field, to the east of Chapacao, in the Panuco River Basin; several to the northeast and south of Cacalilao in the same basin; several others in the vicinity of the Tamesi River, a tributary of the Panuco; new lines of pools parallel to the "Golden Lane" in the Tuxpan region, north of the river of that name; others which prove the prolongation of the "Golden Lane" to the south of the Tuxpan River; that of Teapa, which is to the east of Puerto Mexico, on the Isthmus of Tehuantepec, and enlargements of the notable Filisola Field in the same isthmus region. Important works were also started in new regions which had not been previously exploited, such as in northern Tamaulipas and Coahuila, on the northern border.

Drilling Report

For the drilling of new wells, there were issued in the year 1927, 804 permits, there corresponding 83 to January, 62 to February, 89 to March, 50 to April, 94 to May, 54 to June, 74 to July, 77 to August, 66 to September, 58 to October, 42 to November and 55 to December.

During the year, work was carried on in the fields on the northern border of Mexico, north of Coahuila and Tamaulipas; in the basins of the Panuco and Tamesi Rivers, in the south of Tamaulipas and north of Vera Cruz; the Tuxpan region, from the Tamiahua Lagoon to the south of the Tuxpan River; the Papantla region; in all the fields in the region of the Isthmus of Tehuantepec and in that of Belem, in central Tabasco.

From the drilling carried out during 1927, there were brought in 204 productive wells with a total joint producing capacity of 383,702 bbls. daily, these wells being distributed by camps as follows:

Productive Wells Brought in From January to December, Inclusive, 1927

Zones—	No. Wells	Initial Daily Prod. Bbls.	Average Daily Prod. Per Well Bbls.
Camargo (northern dist. Tamaulipas).	1	*	*
South district of Tamaulipas	4	472	119
Ebano	42	107,056	2,547
El Limon	4	786	195
Cacalilao (Panuco)	37	33,199	899
Panuco (various)	44	123,429	2,805
Topila	18	1,516	82
San Jeronimo	2	119	57
Dos Bocas	1	8,995	8,995
Chiconcillo	1	201	201
Tepetate-Amatlan	4	667	164
Toteco	1	94	94
Cerro Viejo	2	11,429	5,774
Tierra Blanca	10	38,941	3,894
Jardin-Paso Real	4	35,104	8,775
San Isidro	1	4,994	4,994
Teapa (Isthmus)	2	19	13
Ixhuatlan (Isthmus)	1	19	19
Filisola (Isthmus)	24	16,662	692
Belem (Tabasco)	1	†	†
Total	204	383,702	1,881

*Not tes.ed. †Gas.

Of the foregoing wells, 22 came in during January, 20 in February, 31 in March, 33 in April, 25 in May, 21 in June, 13 in July, 9 in August, 12 in September, 6 in October, 7 in November and 5 in December. Of these wells, the most notable, without doubt, were those which in recent months were brought in on the Paso Real tract, to the south of the Tuxpan River, and which have opened new and most interesting horizons, proving that the famous "Golden Lane" in the Tuxpan zone extends to the southeast, beyond the Tuxpan River.

The production in 1927, 64,119,884 bbls., had a commercial value of $157,540,850 pesos Mexican currency. The movement of production during the year was as follows:

Petroleum Production in Mexico in 1927

Months—	Bbls.	Values in Mex. Pesos
January	6,075,706	14,916,073
February	5,425,905	13,315,863
March	5,706,376	13,931,335
April	5,524,954	13,447,155
May	5,829,673	14,170,950
June	5,320,680	12,998,043
July	5,488,421	13,451,210
August	5,392,096	13,243,500
September	4,774,421	11,772,840
October	4,932,096	12,255,335
November	4,809,592	11,974,172
December	4,839,167	12,064,574
Total	64,119,097	157,540,850

With the foregoing figures in mind, the total Mexican production during the 27 years of continuous exploitation amounts to 232,906,389 cubic meters (1,456,047,181 bbls.) with a commercial

LEGAL

NOTICE OF SALE OF STATE ROYALTY OIL

Notice is hereby given that the Board of Land Commissioners of the State of Wyoming will receive and consider sealed bids or proposals for the purchase of royalty oil, natural gas, casinghead gasoline and natural gasoline derived from leases upon State lands located in the following Oil and Gas fields in the State of Wyoming, to-wit:

Osage Elk Basin Ferris Mahoney Dome
Big Muddy Rock Creek Grass Creek

subject to the following conditions:

1. All bids or proposals must be received at the Office of the Commissioner of Public Lands, Capitol Building, Cheyenne, Wyoming, on or before ten o'clock A.M., Monday, April 16th, 1928.

2. The royalties offered for sale have been appraised to sell for not less than the posted field price for oil of like kind and quality and the prevailing field price for natural gas, casinghead gasoline, and natural gasoline. Therefore, no bids or proposals will be considered for less than the field price for each product of like kind and quality.

3. All bids or proposals must be accompanied by a filing fee of $1.00; also a certified check payable to the Commissioner of Public Lands for $5,000.00 for each field covered in the bid or proposal, as a guarantee that should the bid or proposal be accepted by the Board of Land Commissioners the terms thereof will be fulfilled by the bidder.

4. Bids or proposals may cover the entire output in all of the fields, or may be submitted separately, or covering the output from one or more leases, covering the output in one field, or more than one field.

5. All oil must be refined in the State of Wyoming.

6. Bids or proposals will be considered for a period of one, three, and five years.

7. The successful bidder will be required to furnish a surety bond, in the amount fixed by the Board of Land Commissioners, guaranteeing the performance of the contract.

8. Each bid or proposal must be distinctly marked "Bid for Royalty Oil."

9. Sworn financial statements of all bidders must accompany such bids. All associations, or individuals not incorporated, must furnish a sworn statement listing the individuals interested in the bids.

10. The Board reserves the right to reject any or all bids or proposals offered for said royalties.

11. The new contract covering Big Muddy Field will not become effective until August 9, 1928.

Statements showing the production and gravity from each field for the last five years may be secured from the Commissioner of Public Lands.

In Witness Whereof, We have hereunto set our hands and caused to be affixed the seal of the Board this 8th day of March, A. D. 1928.

(SEAL)
ATTEST:

C. M. COX,
Commissioner of Public Lands, Secretary.
FRANK C. EMERSON,
President, Board of Land Commissioners of the State of Wyoming.

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value of $2,627,465,426, Mexican currency.

Exports Dropped

The exportation in 1927 was the lowest since 1918 The normal exportation on a large scale, of Mexican petroleum products, started in 1911, following a rising curve until 1922, when it reached its peak, then falling off year by year until reaching the figures for 1927, which we consider as the limit of the decrease, believing that, with production, it will react favorably during the present year.

In 1918, exportation was 51,767,219 bbls., in 1919, 75,549,715 bbls., and in 1927 was 52,972,215 bbls. The exports in 1927 are divided into two groups, that of crude products or their derivatives, all of national production, and that of derivatives from foreign petroleum which were imported to Mexico to be treated in our refineries. Those in the first group amount to 48,421,054 bbls.

Petroleum Products of National Production Exported From Mexico in 1927

Months—	Bbls.
January	4,512,490
February	4,321,073
March	3,869,224
April	4,743,956
May	4,884,260
June	4,679,798
July	4,547,739
August	4,197,090
Sep ember	3,866,695
October	2,767,782
November	3,215,750
December	2,815,177
Total	48,421,034

The exportation of petroleum products derived from petroleum and derivatives of foreign source, treated in Mexican refineries during the year 1927, gave a total of 4,551,181 bbls.

Petroleum Products Derived From Petroleum and Its Derivatives From Abroad, Exported From Mexico in 1927

Months—	Bbls.
January	114,748
February	57,258
March	326,439
April	401,824
May	697,624
June	526,926
July	408,196
August	334,458
September	456,692
October	619,263
November	517,202
December	91,851
Total	4,551,481

In the course of 1927, there were no changes in the prices on Mexican crude petroleums, the following quotations remaining fixed: Heavy crude, f.o.b. ships, Tampico, not including taxes, at $14.47. Mexican currency, a cubic meter ($1.15 a barrel); and light crude, under the same conditions, at $16.98, Mexican currency, a cubic meter ($1.35 a barrel.)

Gasoline Lower

It is estimated that the Mexican consumption of gasoline during the year 1927 was approximately 190,000,000 litres. This consumption is being stimulated by the growing use of automobile vehicles, of which, toward the middle of last year, there were approximately 51,000 in use in the Republic and it is certain that at the present time they will reach approximately 65,000. Their number increases from day to day, not only because of the advantages which their application have, but because of the great development which is being given by the entire country to the construction of new highways, to the conservation of those already existing and to the paving of the cities. Recently, there has been added to the network of existing roads, approximately 1,000 kilometers of modern highways, all of them magnificent, very important and some of them very beautiful, such as those to Puebla from Mexico and the Mexico-Cuernavaca-Acapulco road.

Another factor which has undoubtedly contributed to the more frequent use of automobiles is the drop which has taken place in the price of gasoline in Mexico About the month of August of last year, some consuming groups began to import American gasoline in large quantities and then, from a price which for so many years had been maintained between 20 cents and 22 cents, Mexican currency, a litre (38 cents to 42 cents a gallon), it began to drop until it reached 11 cents, Mexican currency, a litre (21 cents a gallon), the price having remained in recent months at 16 cents, Mexican currency, a litre (30 cents a gallon.)

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tion of petroleum products in 1927 are not yet available, but it is judged that it will be approximately the same as in the year 1926 and this in spite of the economic crisis from which Mexico has been suffering and has been so accentuated during the latter months of the past year.

Toward the end of that year, there was also promulgated a decree which establishes the regulations for petroleum work. These regulations are the codification of a collection of dispositions which had successively been put in force and which for more than 11 years had been carefully studied and observed. The regulations have summed up and perfected this work so that it is based on scientific principles, on the most recent advances of science and on what is taught by an observation of our fields and those abroad, the companies having given their co-operation in this work. The Mexican petroleum industry now rests on scientific bases and of well-observed experimentation.

Thus, in the period of crisis through which the petroleum industry in Mexico has passed, time has not been lost, because the foundations have been laid on which may rest its future development and prosperity.

Bureau of Petroleum, Department of Industry, Commerce and Labor, Mexico, D. F.

Recent Patents

1,658,116. Process of Cracking Oils. John Collins Clancy, New York City. Filed September 2, 1922. Serial No. 586,029. 8 Claims. (Cl. 196—53.)

1. The process of making gasoline-like

LEGAL

SALE OF OIL AND GAS LEASES DEPARTMENT OF THE INTERIOR

Shreveport, Louisiana

Notice is hereby given that the following described lands in eight units in the known geologic structure of the Monroe Gas Field, Louisiana, are offered for lease under Section 17 of the act of February 25, 1920 (41 Stat., 437), at the customary sliding scale of 12½ to 33⅓ per cent of the quantity or value of the oil produced, of 12½ to 16⅔ per cent of the value of the gas produced and of 16⅔ per cent of the value of the natural-gas gasoline produced from each unit in accordance with the royalty schedule in the regular lease form, and the rental as required by Section 17 of the said act:

Unit No. 1.
T. 18 N., R. 4 E., Sec. 24, Lot 3, 9.24 acres.

Unit No. 2.
T. 19 N., R. 4 E., Sec. 8, NE¼ of NE¼, 40.00 acres.

Unit No. 3.
T. 19 N., R. 4 E., Sec. 30, Lots 1, 2, SE¼ NW¼, 106.70 acres.

Unit No. 4.
T. 19 N., R., 5 E., Sec. 10, SE¼ of SE¼, 39.82 acres.
T. 20 N., R. 5 E., Sec. 34, SE¼ of SE¼, 40.07 acres.

Unit No. 5.
T. 19 N., R. 5 E., Sec. 18, S½ of NW¼, Sec. 20, SW¼ of NW¼, Sec. 30, SW¼ of SE¼, 160.47 acres.

Unit No. 6.
T. 20 N., R. 3 E., Sec. 36, Lot 4, 15.80 acres.
T. 20 N., R. 4 E., Sec. 7, NW¼ of SW¼, 39.99 acres.

Unit No. 7.
T. 20 N., R. 4 E., Sec. 1, SE¼ of NW¼, Sec. 13, NW¼ of NE¼, 74.33 acres.

Unit No. 8.
T. 21 N., R. 5 E., Sec. 20, Lot 1; Sec. 29, NE¼ of SW¼; Sec. 32, Lots 2, 3, 4, 124.84 acres; all Louisiana Meridian, Louisiana, total, 651.26 acres.

The units are to be offered separately and are to be so considered as a basis for the payment of royalty, but any lessee may acquire two or more of the units in which the combined acreage does not exceed 640 acres.

The lands are offered for lease subject to the drilling of offset wells by the lessee first on lands adjacent to tracts on which commercial production of gas has been demonstrated, such drilling operations to be initiated within ninety days after the delivery of the executed lease, each succeeding well thereafter as required to be drilled by the terms of the lease shall be spudded in within ninety days of the completion of the drilling well, all drilling operations to be in conformity with the laws of the State of Louisiana and to be continuously and diligently prosecuted in accordance with the Federal oil and gas regulations.

Said leases will be offered for sale by public auction at the Federal Court Room, Shreveport, Louisiana, at 10 a. m., on February 27, 1928. The successful bidder must deposit on the date of sale, with the officer in charge of the sale certified check on a solvent bank, or cash, for one-fifth of the amount bid by him, and file the showing of qualifications to receive a lease required by Sec. 15 of said regulations.

Bidders are warned against violations of the provisions of Sec. 59, U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders.

The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior.

JAMES W. NEAL,
Officer in Charge.

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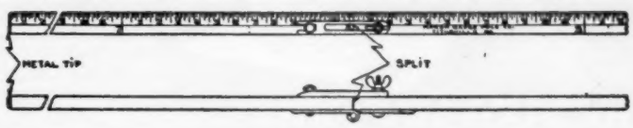

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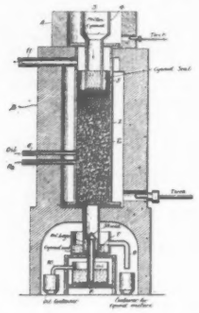
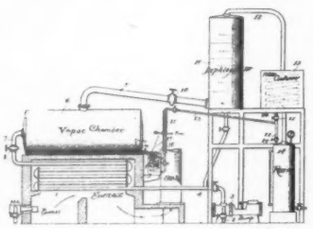
material from heavier hydrocarbon oil which comprises, cracking such heavier oil by commingling it with a molten body containing alkali metal cyanid in the presence of a metallic catalyst maintained at cracking temperature.

7. The process of producing gasoline-like material from heavier oil which comprises flowing said oil in the presence



of hydrogen into contact with a molten body containing sodium cynaid through a retort filling of nickel packing units maintained at cracking temperature, supplying the said molten body to and withdrawing the reaction products comprising molten material and unvaporized oil from the retort filling of packing units through liquid sealed passages, and collecting the evolved vapors and gases from the retort.

1,658,420. Apparatus for Treating Oils. George D. Sims, Independence, Kans., assignor to Universal Oil Products Co., Chicago, a corporation of South Dakota. Filed June 17, 1921. Serial No. 478,249. Renewed March 10, 1927. 3 Claims. (Cl. 196—137.)



3. In an apparatus for treating oil under superatmospheric pressure at high temperatures, the combination with an enlarged chamber in which a body of oil is adapted to be maintained under a superatmospheric pressure, of means for indicating the level of the oil in said chamber, comprising a gauge, a liquid oil discharge line from said chamber communicating with said gauge, means interposed in said line for cooling the oil before it is admitted to the gauge, a vapor outlet from said chamber, condensing means connected with said vapor outlet for condensing the condensable constituents from the vapors passing through said vapor outlet, and means for admitting uncondensed gases, which have passed through said condensing means, to said gauge, to maintain the oil in the gauge under the same pressure as the pressure maintained on the oils in said enlarged chamber.

LEGAL

TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION
March 28 and 29, 1928
By United States Government

March 28 and 29, 1928, at Pawhuska, Oklahoma, about 90,000 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 25% payable on day of sale, balance in three annual installments, with acceptable security. Within advertised area there are about 9,875 oil wells producing from one barrel to 2,000 barrels each, the total daily production for December, 1927, being about 58,200 barrels; also there are about 85 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for fifty cents each, also logs of producing oil or gas wells for twenty-five cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs or other information.

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124-125

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for January

Runs

	Month	Dly. Av.
*Prairie Pipe Line Co.	4,495,000	145,000
Gulf Pipe Line Co.	1,286,286	41,493
Texas Pipe Line Co.	1,369,006	44,161
Empire Pipe Line Co.	899,768	29,025
Magnolia Pipe Line Co.	2,127,721	68,636
Cosden Pipe Line Co.	841,638	27,150
*Sinclair Pipe Line Co.	2,619,500	84,500
Oklahoma Pipe Line Co.	3,648,712	117,700
Shell Pipe Line Co.	2,299,738	74,185
*Other lines	4,898,000	158,000
Total January	24,485,369	789,850
Total December	25,634,861	826,931
Difference	1,149,492	36,081

Shipments

Prairie Pipe Line Co.	5,394,759	174,025
Gulf Pipe Line Co.	1,287,671	41,538
Texas Pipe Line Co.	1,025,364	33,076
Empire Pipe Line Co.	965,801	31,155
Magnolia Pipe Line Co.	1,593,315	58,171
Cosden Pipe Line Co.	952,849	30,737
†Sinclair Pipe Line Co.	2,697,287	87,009
Oklahoma Pipe Line Co.	3,398,518	109,630
Shell Pipe Line Co.	2,321,651	74,892
*Other lines	5,580,000	180,000
Total January	25,427,215	820,233
Total December	25,846,087	832,709

Stocks

*Prairie Oil & Gas Co.	32,350,000
*Prairie Pipe Line Co.	2,500,000
Gulf P. L. and Gypsy Oil Co.	10,318,789
The Texas Company	6,426,846
Empire Pipe Line Co.	4,334,405
Cosden Pipe Line Co.	3,350,359
*Sinclair Crude Oil Pur. Co.	21,170,000
Magnolia Petroleum Co.	6,426,846
Oklahoma Pipe Line Co.	2,945,120
Carter Oil Co.	15,404,340
*Other lines	11,750,000
Total January	116,976,705
Total December	116,671,808
Difference	304,897

*Estimated. †Prairie shipments include Texas crude oil and Sinclair shipments include Texas and Wyoming crude oil.

Note: Stocks do not include approximately 7,000,000 bbls. of crude oil held in storage on private tank farms and leases and 1,500,000 bbls. of Texas Panhandle crude oil in storage in Oklahoma and Kansas.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan.'28	Feb.'28
Nat. Transit	150,803.87	150,792.56
S. W. Pa. P. L.	86,787.96	86,300.70
Eureka P. L.	361,589.34	358,514.02
Buckeye P. L. (Macksburg)	342,901.40	336,290.14
Buckeye P. L. (Cleveland)	10,402.53	10,650.78
Buckeye P. L. (Lima, etc.)	102,753.20	108,503.36
Indiana P. L.	5,916.95	6,990.90
Cumberland P. L.	224,870.56	216,913.65
N. Y. Transit	21,317.31	20,961.60
Tidewater P. L.	181,415.82	179,353.35
Pure Oil	66,257.80	64,170.62
Emery P. L.	52,122.24	54,952.72
Paragon Dev.	21,188.15	46,564.77
Stoll Oil Ref.	11,710.30	12,100.29
Total	1,640,037.52	1,653,059.46
Daily avg.	52,904.44	57,002.05

Note—Indian Refining Co. also reported other receipts of 306,927.39 bbls. Paragon Refining Co. had other receipts of 171,374.16 bbls. Paragon Development had other receipts of 1,343.02 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for December and January:

	Jan.'28	Feb.'28
Nat. Transit	469,229.36	550,710.53
S. W. Pa. P. L.	359,339.67	300,851.13
Eureka P. L.	187,006.50	92,771.88
Buckeye P. L. (Macksburg)	140,151.88	134,030.96
Buckeye P. L. (Cleveland)	1,221.53	978.44
Buckeye P. L. (Lima, etc.)	951,977.88	1,391,510.04
Indiana P. L.	1,170,000.62	1,160,002.87
Cumberland P. L.	118,509.61	137,571.67
N. Y. Transit	128,724.19	149,006.60
Northern P. L.	185,009.92	163,752.84
Tidewater P. L.	153,752.94	143,901.23
Pure Oil	68,558.07	63,494.40
Emery P. L.	55,932.54	54,814.47
Paragon Ref.	182,235.57	167,179.39
Indian Ref.	347,862.85	307,159.80
Paragon Dev.	20,658.67	45,839.18
Total	4,540,221.80	4,853,665.43
Daily av.	146,465.22	167,367.77

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of January and February:

	Jan.'28	Feb.'28
Nat. Transit	1,149,108.83	1,123,231.06
S. W. Pa. P. L.	675,945.25	756,131.52
Eureka P. L.	1,715,048.80	1,782,756.00
Buckeye P. L. (Macksburg)	426,940.19	424,216.38
Buckeye P. L. (Cleveland)	42,161.59	55,606.63
Buckeye P. L. (Lima, etc.)	5,132,654.61	4,763,213.91
Indiana P. L.	637,623.18	695,067.72
Cumberland P. L.	627,679.02	650,094.40
Southern P. L.	378,610.99	383,995.42
N. Y. Transit	752,445.09	808,998.76
Northern P. L.	547,050.52	537,565.25
Pure Oil	59,565.11	60,918.70
Emery P. L.	7,313.38	7,916.48
Paragon Ref.	16,869.68	20,811.72
Indian Ref.	99,260.00	100,463.76
Paragon Dev.	7,433.22	10,031.11
Total	12,276,709.76	12,180,418.82
Decrease	63,587.49	96,290.94

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of January and February, showing the gross stocks of the above fields:

	Jan.'28	Feb.'28
Pennsylvania	3,823,756.32	3,821,614.45
Lima	1,202,935.45	762,432.37
Kentucky	996,124.21	1,049,761.11
Mid-Continent	6,186,868.36	6,460,176.14
Illinois	67,025.42	86,534.75
Total	12,276,709.76	12,180,418.82

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1925	1926	1927	1928
Jan.	56,831	55,630	56,209	52,904
Feb.	60,606	60,394	61,298	57,002
Mar.	60,575	61,644	63,347	.....
April	63,062	63,019	60,337	.....
May	59,217	60,580	60,284	.....
June	61,270	61,131	62,757	.....
July	62,639	63,206	58,674	.....
Aug.	59,686	61,815	60,870	.....
Sept.	62,510	64,829	60,285	.....
Oct.	145,388	161,132	147,036	.....
Nov.	59,350	61,774	57,275	.....
Dec.	57,974	58,755	53,089	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1925	1926	1927	1928
Jan.	157,389	156,056	141,227	146,465
Feb.	160,863	159,488	138,534	167,368
Mar.	154,591	150,239	133,777	.....
April	151,429	152,371	140,227	.....
May	146,995	160,998	144,594	.....
June	149,467	160,257	149,772	.....
July	161,338	160,045	151,850	.....
Aug.	161,730	151,929	138,653	.....
Sept.	156,719	158,915	144,213	.....
Oct.	145,388	161,132	147,036	.....
Nov.	143,582	152,608	150,975	.....
Dec.	150,162	136,428	144,594	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1926	1927	1928
Jan.	9,859,170	9,718,008	12,276,710
Feb.	9,579,354	10,119,162	12,180,418
Mar.	9,438,272	10,794,044	.....
April	9,805,851	11,112,295	.....
May	9,531,757	11,359,381	.....
June	9,585,904	11,493,673	.....
July	9,734,687	11,458,128	.....
Aug.	9,058,947	11,959,115	.....
Sept.	9,436,732	12,212,716	.....
Oct.	9,269,806	12,047,661	.....
Nov.	9,257,067	11,939,740	.....
Dec.	9,454,512	12,340,297	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1927—	Runs	Shipments	Stocks
Jan.	2,641.54	1,470.42	14,274.34
Feb.	2,764.30	1,982.62	15,056.22
Mar.	2,587.20	1,878.56	15,664.86
April	2,834.23	1,512.65	17,386.54
May	2,708.40	539.29	20,215.72
June	2,946.29	664.40	22,497.61
July	3,153.39	1,276.61	24,374.39
Aug.	3,057.89	8,713.11	18,719.17
Sept.	3,309.56	2,656.48	19,372.25
Oct.	2,801.32	1,226.90	20,946.58
Nov.	2,746.50	2,220.53	21,472.55
Dec.	2,779.86	1,893.69	22,358.72
1928—			
Jan.	1,886.06	2,424.79	21,819.99

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	2,235,305.00
Runs from wells	546,734.01
Other receipts	479,720.59
Regular deliveries	397,350.23
Other deliveries	401,670.51

The amount of Illino's oil run by the Tidewater Pipe Co. in February was 26,886.77 bbls., and deliveries were 52,867.58 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1927—	Runs	Deliveries
February	595,831.16	476,950.71
March	727,593.94	554,947.42
April	598,225.97	444,818.49
May	728,759.40	543,192.02
June	640,975.85	532,217.72
July	613,961.30	484,902.55
August	651,276.40	529,331.37
September	619,589.49	433,212.49
October	601,099.25	408,287.58
November	605,621.14	415,188.06
December	577,321.25	397,176.07
1928—		
January	561,759.57	434,147.93
February	573,419.78	450,217.81

Tidewater Pipe Co., Ltd., also delivered in February, 251,024.23 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS						Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total		
September	23,033	6,967	51,400	14,567	19,533	115,500	.....	.....	.....	.....	.....		115,500
October	20,936	4,355	47,968	14,129	14,887	101,774	.....	.....	.....	.....	.....		101,774
November	9,433	2,833	23,033	15,166	4,933	55,400	.....	.....	.....	.....	.....		55,400
December	10,742	3,033	30,258	24,387	7,065	75,484	.....	.....	.....	.....	3,613		79,097
January	15,387	3,033	31,032	7,452	9,710	66,613	.....	.....	.....	.....	.....		66,613

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

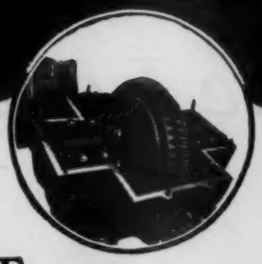
Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	
September	28,033	11,433	85,500	12,800	37,700	175,467	5,667	19,233	.....	3,600	28,500	203,967
October	26,064	13,097	79,355	3,838	34,097	156,451	1,613	19,323	806	1,871	23,612	180,064
November	35,233	8,033	84,533	30,100	27,067	184,967	4,000	26,500	2,000	1,667	34,167	219,133
December	39,968	2,387	75,968	19,097	29,836	170,258	2,580	15,356	839	1,226	20,000	190,258
January	15,226	4,323	107,645	27,871	39,774	194,839	5,000	32,516	.....	1,355	38,871	233,710

GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS (REVISED)

(In Barrels)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
1927—										
February:	Month	17,982,711	19,752,348	16,425,416	3,352,076	3,574,256	1,842,400	2,429,864	3,007,200	68,374,271
	Daily average	642,240	705,441	586,622	119,717	127,652	65,800	87,138	107,400	
March:	Month	19,835,724	22,480,921	18,179,491	3,675,143	3,853,920	2,086,108	2,684,724	3,325,800	76,131,881
	Daily average	639,862	725,191	586,435	118,553	124,320	67,294	86,604	105,100	
April:	Month	19,493,825	22,208,130	17,755,920	3,516,930	3,378,240	2,039,550	2,671,320	3,474,000	74,538,435
	Daily average	649,794	740,271	591,864	117,231	112,608	67,985	89,061	115,800	
May:	Month	19,506,054	23,258,462	19,489,607	3,704,314	3,493,669	1,984,651	2,682,161	3,467,000	77,585,909
	Daily average	629,228	750,273	628,697	119,494	112,699	64,021	86,521	111,839	
June:	Month	19,181,442	22,830,330	18,360,450	3,437,580	3,365,760	1,920,180	2,634,570	3,330,000	75,060,313
	Daily average	639,381	761,011	612,015	114,586	112,192	64,006	87,819	111,000	
July:	Month	19,319,021	26,622,546	17,580,348	3,464,082	3,406,682	2,311,019	2,678,679	3,363,300	78,635,673
	Daily average	623,194	855,566	567,108	111,422	109,893	74,549	86,409	108,484	
August:	Month	19,279,131	26,283,350	17,682,927	3,442,240	3,242,600	2,231,202	2,489,021	3,571,000	78,221,471
	Daily average	621,907	847,850	570,417	111,040	104,600	71,974	80,291	115,194	
September:	Month	19,064,500	24,111,660	18,322,800	3,341,340	3,032,970	2,027,070	2,268,630	3,465,000	75,633,970
	Daily average	635,483	803,722	610,760	111,378	101,099	67,569	75,621	111,774	
October:	Month	19,448,593	24,247,053	19,200,098	3,509,169	3,117,298	2,058,889	2,255,835	3,400,000	77,340,935
	Daily average	627,384	782,163	619,358	113,199	100,556	66,416	72,867	109,677	
November:	Mon.h	18,516,467	23,083,380	18,625,290	3,313,650	2,906,760	1,956,960	2,324,730	3,303,500	73,942,737
	Daily average	617,216	769,446	620,943	110,455	96,892	65,232	74,491	110,083	
December:	Month	18,938,823	22,208,417	19,840,009	3,427,174	2,962,750	1,927,143	2,400,578	3,219,900	74,924,799
	Daily average	610,930	716,400	640,000	110,554	95,576	62,166	77,438	103,868	
1928—										
January:	Month	19,028,228	21,146,619	20,023,156	3,319,225	2,791,891	1,839,106	2,429,375	3,133,000	73,710,700
	Daily average	613,814	682,149	645,876	107,075	90,061	59,326	78,359	101,000	2,377,765
Total 12 months		229,594,819	278,133,217	221,488,512	41,493,023	39,126,797	24,224,283	29,873,037	40,068,700	904,002,388
Daily average		628,937	762,009	606,819	113,680	107,196	66,368	81,844	109,775	2,476,719

PREPAREDNESS



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L. P. LAMBERT
Standing at Right

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